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ABSTRACT

The research reflected herein reveals not only current educational developments in China but exemplifies the usefulness of comparative education. This publication, stemming from a June 1988 conference in Buffalo, New York, on education in China, is written from a uniquely Chinese perspective mixed with a firm understanding of education in other countries and of a variety of research methodologies learned from doctoral study in the United States. Topics include an organizational analysis of central administration; expansion of higher education (1977-1987); current reform in higher education; issues and trends of the specialization structure in higher education; an analysis of issues and perspectives on compulsory nine-year education; policies and realities concerning why high school teachers do not want to teach; the conflict between two career options (vocational or liberal arts education); status differences in the natural and social sciences; training and development in distance education and learning; a perspective on the development of career counseling; and women's education--progress and contradictions in revolution and in modernization. (JAM)

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PERSPECTIVES ON CONTEMPORARY EDUCATION IN CHINA

SPECIAL STUDIES IN COMPARATIVE EDUCATION NO. 21
COMPARATIVE EDUCATION CENTER
Faculty of Educational Studies
State University of New York at Buffalo

Proceedings of the First Conference
of China Education International
held at State University of
New York at Buffalo
July 1-3, 1988.

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Editors

Jing Wang
Yenbo Wu

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CONTENT

Introduction -- II
Philip G. Altbach

An Organizational Analysis of Central Administration in China ---------------------------------- 1
Su, Zhixin

Expansion of Higher Education in China (1977-87): Progresses, Problems and Policy Implications --------- 16
Zhou, Nanzhao

Current Reform in Higher Education of China ---------- 33
Chen, Shu-qing

Issues and Trends of the Specialization Structure in Higher Education in China ---------------------------- 43
Huang, Jian Ru

Compulsory Nine-Year Education in China: Issues and Perspectives ------------------------------ 54
Wang, Jianliang

Policies and Realities: Why High School Teachers Do Not Want to Teach? ------------------------------ 65
Wu, Yen-bo

Vocational Education or Liberal Arts Education: An Idea Conflict in China --------------------------- 79
Lin, Jing

Natural and Social Sciences, A Different Status? ----- 90
Zhang, Junlei

Training and Development of Distance Education in China ---------------------------------- 104
He, Lianping

A Perspective of the Development of Career Counseling in School Systems in the People's Republic of China --------------------------- 115
Hu, Xiaolu

Women's Education in the People's Republic of China: Progress and Contradictions in Revolution and in Modernization --------------------- 127
Mak, Grace C. L.

Contributors -- 147

7

INTRODUCTION

This publication, Perspectives on Contemporary Education in China in the Comparative Education Center's series, is a particularly significant one because it reflects an emerging organization and some of the best research on education being done by Chinese researchers studying in the United States on Education in the People's Republic of China. This publication stems from a conference held in Buffalo in June of 1988 on education in China. The main participants were doctoral students in education from China. All are now studying for their doctoral degrees in American universities. They will soon return to China to apply the skills they have learned while studying abroad. Through the initiative of an informal group of graduate students in education, an informal network of Chinese scholars now exists. The Buffalo conference was the first opportunity for this group to meet and to share research. The conference was supported by the Comparative Education center, the Faculty of Educational Studies and the Council on International Studies and Programs, all of the State University of New York at Buffalo and by the University of Virginia.

The development of a network of Chinese scholars in education working in the United States but with strong ties to developments in China is a very important development and may provide a model for other disciplines and other national groups. The network not only gives the participants a chance to share ideas and data on topics of current relevance to Chinese education, but it also provides a forum to present research to a wider scholarly community, both in the United States and in China. The initiatives of the organizers is all the more impressive because it had no significant financial support and was in addition to the heavy academic responsibilities of the participants.

The research reflected in this publication is relevant not only to current educational development ion China but also is an example of the usefulness of comparative education. The authors write from a Chinese perspective but their work is informed by an understanding of educational realities in other countries and by a variety of research methodologies learned during doctoral study in the United Stats. It is a fascinating combination of approaches.

The Comparative Education Center is honored to be part of a highly significant network of scholars. North American scholars can learn much from the research presented in this publication. Further, we can learn as well from the initiative of our Chinese colleagues.

Philip G. Altbach, Director
Comparative Education Center
Faculty of Educational Studies

State University of New York at Buffalo

April 1989

AN ORGANIZATIONAL ANALYSIS OF CENTRAL EDUCATIONAL ADMINISTRATION IN CHINA

Zhixin Su

University of Washington

On June 18, 1985, the 11th Plenary of the Standing Committee of the People's Congress in China passed a resolution on the abolition of the Ministry of Education (MOE) and the establishment of the State Education Commission (SEdC). Why did China make this change in its central educational administration? What are the consequences of this reform? Has this reorganization created a strong leading body for the current educational reform in China? An organizational analysis of the history and organization, the administrative tools, and the functions and dysfunctions of the former MOE will provide answers to these questions.

History and Organization

To understand the history and organization of the former MOE, it is imperative, first of all, to comprehend the value system, politics and ideologies in the larger Chinese society. In his sociological theory of organization, Talcott Parsons (1956) suggests that the main point of reference for analyzing the structure of any social system is its value pattern, which legitimates the organization's goals and guides the activities of participant individuals. This approach is particularly useful when applied to the analysis of organizations in China, where social orders and social systems are built on a set of distinct values, political principles and disciplines, and official ideologies.

Socialist China's values are expressed in an ideology based upon the ideas of Marx, Engels, Lenin and Mao Zedong. They reflect both a commitment to universal norms and goals derived from Marxism, and a specific application of these over-arching concepts to conditions in China. In the earlier years after the founding of the People's Republic of China, Mao urged all organizations, especially educational institutions, to shoulder their responsibilities in ideological and political work. Therefore, the primary aim of education in China is to serve the needs of politics, to transform the students ideologically, and to enable everyone who receives an education to develop morally, intellectually, and physically and become a well-educated worker imbued with socialist consciousness.

In addition, the organizational structure of education in China is deeply nested within the Chinese Communist Party, which is the core of leadership of the whole Chinese people. Hence, educational administration at all levels in China strictly adheres to the disciplines of the Communist Party, namely, the individual is subordinate to the organization; the minority is subordinate to the majority; the lower level is subordinate to the higher level; and the entire membership is subordinate to the Central Committee (Mao, 1938).

The formation and evolution of the former MOE was a faithful reflection of China's political ideologies and disciplines. Unlike in the United States where the Constitution contains no mention of the federal government's policy-making role in education, the legislative powers are all vested in the central authorities in China. Therefore, it was necessary to establish the MOE as the highest level of organization in educational administration shortly after the birth of New China in 1949. The Ministry went through several reorganizations in the 1950s and 60s as a result of the government's effort to combat bureaucracy and to centralize decision-making power. Then, the Ministry ceased to function and remained paralyzed for eight years during the Cultural Revolution (1966-1976). The MOE was reestablished in 1975 and further consolidated in 1977. Figure 1 is an organization chart of the Ministry of Education in 1977.

Minister and Head of the Party Committee

General Affairs Office
Policy Research Office
Bureau of Planning
Bureau of Foreign Affairs
Bureau of Information & Documentation

First Department of Higher Education
Second Department of Higher Education
Department of Teacher Education
Department of Elementary & Secondary Education

Department of Student Affairs
Department of Vocational Education
Department of Physical Education
Department of Education for Workers and Peasants

Department of Education for Minority Nationalities
Department of General Supplies & Construction

Figure 1:
Organization of the Ministry of Education in China (1977)

The Ministry directly reported to the State Council and received its budget through the State Planning Commission. Under each of the 15 Offices, Bureaus, and Departments within the Ministry, there were divisions performing various duties. The staff totaled about 700. It was a very tightly coupled system, with directives flowing from the top down and with each level obeying and reporting to the level immediately above it.

Although our ideologies and disciplines are different from those in the West, I find that most organizations in China including the former MOE demonstrate almost all the characteristics of bureaucracy described by Western organization theorists Katz(1971) and Weber (1946): large size, specialization of work; authority residing in the office, not in the person; centralization of control with authority hierarchically distributed; division of labor based upon differentiated functions; rules and regulations to govern operations; a separation of personal from official property and rights; and an increasing tendency of selection of personnel on the basis of technical qualifications. For Weber (1947), bureaucracy could be the most efficient form of organization. But Benveniste (1977) argues that bureaucracy is probably the number one issue in education. Actually, bureaucracy is not a new phenomenon in China. The ancient imperial system was very advanced although it had not developed a full bureaucracy in Weber's sense. Parsons (1966) observes that the classical Chinese administrative system was the mainstay of an imposing socio-political structure which was without peer in scale, stability, and durability until the truly modern era. Obviously, the Chinese, as the Westerners, are aware of the fact that "bureaucracies are powerful institutions which greatly enhance potential capacities for good or for evil, because they are neutral instruments of rational administration on a large scale" (Blau, 1956:4).

In fact, to a certain extent, the Chinese social structure is more hierarchical and bureaucratic than that in some Western countries, for China has always been a highly centralized country with a large population and vast land. American educators who visited China were often impressed by the Chinese practice of decision-making by rules and standardized criteria, within a system that is more structured than any in the U. S. The Chinese people in tradition adore grand-scale organizations and ceremonies and obey orders from their superiors with few questions. It is true that in all societies, the great state and the mass party are the classic soil for bureaucratization (Weber, 1946). Combating bureaucracy within the Party and the administrative organizations has always been a major concern in China.

Administrative-Tools

The administrative tools employed by the former MOE and other government organizations in China are in many cases similar to those used in state organs in the West. For instance, in our administrative practices, we generally resort to all of the five techniques described by Henri Fayol (1937): general survey; plan of operations; reports of proceedings; minutes of conferences between heads of departments; and organization chart. In addition, we also employ another three unique mechanisms that are not present in Western central administration, they are the principles of the mass line, democratic centralism, and collective leadership.

In China, the application of the mass line is Mao's method for developing a form of leadership that does not bare itself upon the power of an elite group of Party members but rather converts that power into authority by eliciting the support of the masses. All correct leadership is necessarily "from the masses, to the masses" (Mao, 1943). The mass line is not only an important link between the Party and the masses but also between the higher levels of administration and the cadres at the grass-roots levels. Administrators at the grass-roots levels are expected to provide feedbacks to and exert influence and control over the higher levels through the mass line.

Our second mechanism is democratic centralism. It is stipulated in our Constitution that the organs of the state must practise democratic centralism. Mao (1957) believes that within the ranks of the people, democracy is correlative with centralism and freedom with discipline. They are the two opposites of a single entity, contradictory as well as united. Thus, he promoted a system of democratic centralism, under which people can enjoy extensive democracy and freedom, but at the same time they have to keep within the bounds of socialist disciplines.

The third important base for decision-making in China is the principle of collective leadership. It refers to the interaction and relationships among members within a specific unit. This means that the Party believes that many heads are better than one and that decisions are likely to be more appropriate if they are based upon the experience and the wisdom of the collective. Apparently, the three administrative principles assure certain unity and flexibility in the high-level state organs such as the MOE. However, as we see from the following analysis, at times circumstances and conditions have conspired to undermine the application of these and other administrative tools and caused dysfunctions in China's educational administration.

Functions and Dysfunctions

From Figure 1, we already saw that the MOE was a very rational and tightly coupled system. It was set up to rationalize China's educational system from the top down. Figure 2: Educational Administration in China illustrates the direction of this rationalization.

There has always been a tension between centralization and decentralization in China's educational administration. In a big country like China, local conditions vary greatly from place to place. Although our Constitution vests legislative powers in the central authorities, the central state organs should limit themselves to the functions of making general and key policies, coordinating local efforts, and allocating resources, and allow the local

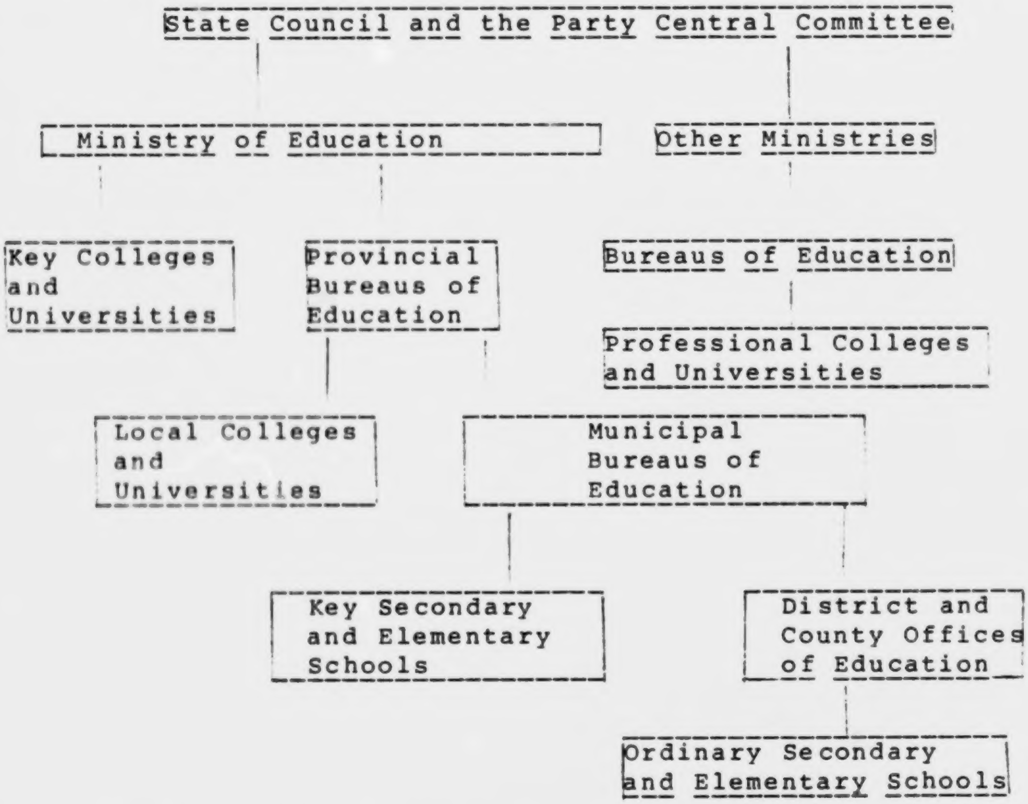

State Council and the Party Central Committee
Ministry of Education
Other Ministries
Key Colleges and Universities
Provincial Bureaus of Education
Bureaus of Education
Professional Colleges and Universities
Local Colleges and Universities
Municipal Bureaus of Education
Key Secondary and Elementary Schools
District and County Offices of Education
Ordinary Secondary and Elementary Schools

Figure 2: Educational Administration in China (1977-1985)

authorities to work out rules and regulations for local practices and development in light of their own conditions. However, many leaders and staff members in China's central government agencies interpret centralization as taking into their own hands all, or as much as possible, of the administrative power. As a result, the state organs often waste much time working out the last details for local unit, while those who work at the lower-levels of administration become increasingly reliant upon the flow of authority from above. Taking care of all often results in taking care of none well. And simply following orders can lead to terrible consequences.

Mao realized in 1953 that "centralization and decentralization are in constant contradiction with each other." However, he did not recognize the problem of too much central control in China and the fact that as tasks become more complex in modern societies, decentralized nets are usually superior to centralized structures (Scott, 1981). Nor did he figure out the optimum proportion of centralization vs. decentralization for China's unique social system. Although Mao established the principles of the mass line, democratic centralism, and collective leadership, in practice the state organs often violate these principles by emphasizing centralism to the extreme so that there was little room for democracy, and by giving orders "to the masses" without constantly gathering ideas and feedbacks "from the masses." In the end, educational administration in China became a linear, top-down, and oftentimes incomplete learning process:

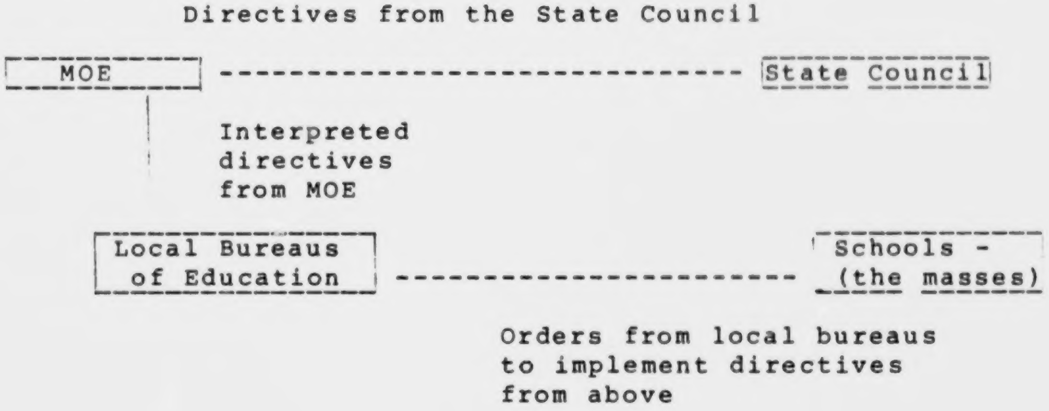

Directives from the State Council
MOE
State Council
Interpreted directives from MOE
Local Bureaus of Education
Schools - (the masses)
Orders from local bureaus to implement directives from above

Figure 3: An Incomplete Learning Process

Essentially, this implies a highly rational model of educational administration: only those who are at the top-level posts have the decision-making power while those at the lower levels merely function as tools for interpreting and transferring directives from the top levels. The majority of the educational administrators in China, therefore, spend much more time interpreting directives from above than innovating policies and methods of educational reform. Both consciously and unconsciously, they have helped to remove the decision centers farther away from the masses. Reorganization of the structure of educational administration and decentralization of power to local units thus became an urgent task in China's educational reform.

The centralized and rational pattern of educational administration in China also resulted in some problems within the MOE. As many staff members interpreted centralization as taking more and more decision-making powers into their own hands, the apparatus of the MOE became bloated and overbureaucratized. It had to devote a disproportionate amount of its staff resources to administration. By 1985, the MOE had doubled its staff since its reestablishment in 1975. Every department and division in the Ministry wanted to grow bigger, and a great number of personnel had to engage in the daily office work of a maintenance nature.

Like in the Western World, accompanying the increased bureaucracy, there is a growth in the power of public officials (Weber, 1946). Although many MOE officials were determined to be humble and honest public servants, there were serious problems of bureaucratic excesses, red tapes, arrogant and impersonal manners and careless working styles. Sometimes it became very difficult for persons from lower-level educational institutions to get satisfactory receptions and services from the MOE officials. Combating bureaucratic working style and streamlining the central government organizations became a major task in China long time ago (Mao, 1953), but it has run into great difficulties, partly because our highly centralized system often easily leads to, rather than hinder the expansion of bureaucracy.

Schmidt (1979), an American educator, comments that China has an educational structure more formal, more ordered, and less open to informal influences than that of the typical bureaucracy in the U. S. This is perhaps a very superficial observation. In China, as in the Western countries, there are informal organizations related to formal organizations everywhere (Barnard, 1938). And like in the West, these informal relationships may either facilitate or impede purposive cooperation and communication (Roethlisberger and Dickson, 1939).

What is different is that in the Western countries, many organizations discourage the development of positive sentiments among their members for fear that such emotional ties will undermine discipline and judgment and will interfere with attempts to deploy participants rationally (Scott, 1981), while in China, organizations generally encourage people to develop positive sentiments and friendship among their colleagues and to care for each other, love and help each other both in and outside of the work settings. There are both advantages and disadvantages in the Chinese approach. On the one hand, it fosters a more humanistic and friendlier atmosphere for people to work in, and create conditions that can buttress the formal organization. On the other hand, it may breed unhealthy contacts and groupings. Although the Chinese Communist Party has devised the mechanism of "criticism and self-criticism" to overcome these tendencies, and has repeatedly called the cadres to proceed in all cases from the interests of the people and not from one's self-interest or from the interests of a small group (See detailed discussions on this topic in Mao, 1945), some detrimental cliques and harmful unofficial norms stubbornly exist inside the Party and the state organs. The MOE was one of the oldest ministries in the central government, thus it had some very complicated informal groupings within the system, which constantly interfered with its normal functions. The old problems could hardly be resolved within the old system. Thus, it became obvious that there was the need to reorganize the central educational administration agency in order to break up the troublesome informal ties and bonds.

About two decades ago, the shrewd Western scholar Charles Perrow (1970) observed that "apparent leadership problems are often problems of organizational structure, instead. Sometimes inappropriate people are misplaced in leadership roles. But it is equally possible to design a leadership role for which it will be hard to find any appropriate person. The real problem may lie in the structure of the organization rather than in the characteristics of the people who head it" (p. 10). Today, the open-minded and reform-oriented Chinese leader Deng Xiaoping (1984) also sees that "although the various mistakes that we have made in the past are related to the ideas and styles of some leaders, the roots of the problem lie deep in the structure of our organization and work" (p. 293). For too long, we have been content with just making moderate changes in our organization and work while leaving the roots of the problem intact. In order to succeed in our modernization efforts, we can no longer ignore the need for structural reform in all aspects of our work. The abolition of the former MOE in 1985 can be seen as the first significant step towards structural reform in China's central educational administration.

Establishment of the SEdC: the Same but Different

With the abolition of the former MOE and the establishment of the State Education Commission (SEdC), one would assume that China's central educational administration is now much different from that in the past. However, in reality, the SEdC has taken over most of the old structure, personnel, as well as the working style of the former MOE. Therefore, the abolition of the MOE was not the end of our problems, but only the beginning of new struggles with old problems.

Nevertheless, there are three distinct differences between the SEdC and the former MOE (Yang, 1985). First, the SEdC has more power and responsibilities than the former MOE. From Figure 2, we can see that in China, professional colleges and universities are under the direct control of their respective ministries. For example, medical colleges are under the Ministry of Health, and engineering institutes are under the various ministries of industry. Since these ministries were at the same power level as the former MOE, none of them, nor their bureaus of education, were willing to listen to the orders from the MOE or answer its calls for coordination. However, in a highly centralized country like China, reform in education can be very difficult without a powerful and able central agency to plan and coordinate the overall development. That is perhaps one of the chief reasons why during the current reform and modernization movement in China, progress in educational field has been much slower than that in the fields of economy and science and technology. The latter two fields have state commissions as the highest policy-making bodies, which are half a level higher than the ministries in China's administrative hierarchy. Hence there arose the need to follow their examples and set up a state commission for education. Now, the SEdC is responsible for the educational work all over China except military schools.

The second difference pertains to the leadership of the central educational administration. The leading body of the SEdC is much stronger than that in the former MOE. Vice-Premier Li Peng, a well-known pragmatic leader in the central government was the Chairman of the Commission for the past two years, and recently State Councilor Li Tieying, a less well-known, but firm believer in reform and modernization, became the new chairman. It is the first time in the history of education since the establishment of the PRC that the central government appointed persons with high positions in the State Council in the highest command of the country's educational system. This was hailed as a decision of strategic importance (Yang, 1985). It demonstrates the central government's special attention to education and has helped raise the status of education work in the Chinese society. In addition, the State Council has appointed several noted educational administrators and scholars as the vice-chairmen and consultants for the Commission.

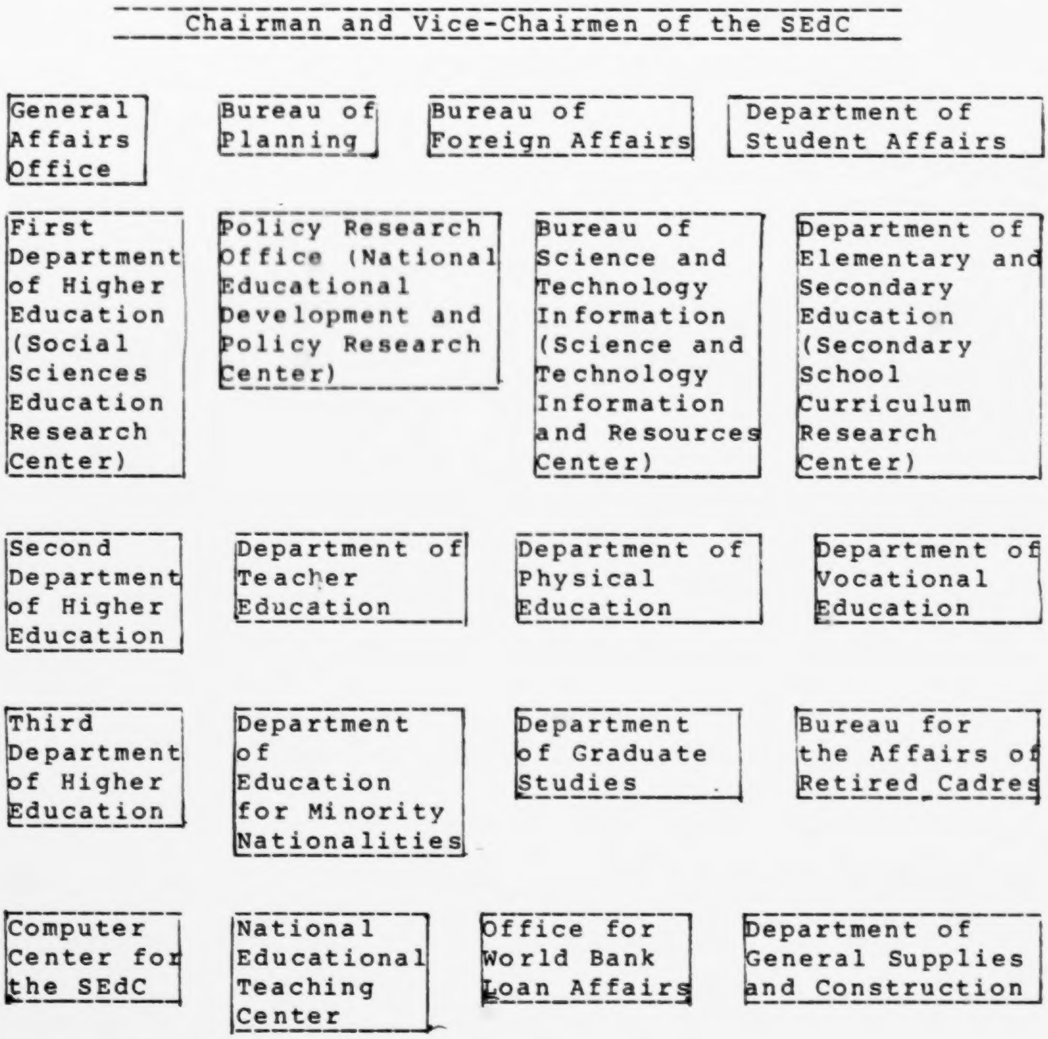
Thirdly, in contrast to the former MOE which lacked clear goals for its work, the SEdC immediately outlined its goals and tasks: "formulating the guiding principles of education, planning the progress of educational undertakings, coordinating the educational work of different departments, and arranging and guiding the educational reform in a unified way" (Wang, 1985). It was expected that the focus of its work would gradually be shifted from stressing micro-management to macro-management.

Moreover, there were also some changes in the organization of the central educational administrative body. Figure 4 shows the current organization of the SEdC. It seems that the SEdC has grown even bigger than the former MOE. There are also more staff members in the SEdC--the number is 1,200 now as compared with 700 in 1985. But just as "bigness" does not always mean superiority over "smallness," new faces do not necessarily guarantee new practices. In fact, it is much easier for new comers to be socialized into the established norms and working styles than for them to create new ways in an established organization.

Prospects for the Future

Three years have passed since the abolition of the MOE and the establishment of the SEC, it is time for China's central educational administrators to review their progress and to contemplate the prospects for the future. In my opinion, there are at least five areas in our central educational administration that urgently need reform.

First, the structure of our organization and work. Although the establishment of the SEdC brought about some structural changes in the central administration, quite a number of the existing bureaus, offices and centers of the SEC are performing tasks not directly related to the central missions of the SEdC. Therefore, they should be removed from the organization of the SEdC. For instance, Educational Testing Center, Secondary School Curriculum Research Center, and Social Sciences Education Research Center can be separated from the SEdC and become independent, non-governmental, and non-profit organizations themselves. The Bureau for the Affairs of Retired Cadres can also be turned into an independent service agency, perhaps in the form of a club or an association. In addition, concerted efforts should be made to break the unhealthy cliques and groupings that originated in the former MOE and still exist in certain sections of the SEdC. Incompetent cadres should be removed from their offices and placed in other suitable job positions. No more excuses and face-savings, for we need able and responsible persons to serve at the very top of our educational administration system. We simply cannot afford to keep those who are used to eat from "the big pot," namely, those who are used to getting the same pay for doing much less than the others.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First Department of Higher Education (Social Sciences Education Research Center)
Policy Research Office (National Educational Development and Policy Research Center)
Bureau of Science and Technology Information (Science and Technology Information and Resources Center)
Department of Elementary and Secondary Education (Secondary School Curriculum Research Center)
Second Department of Higher Education
Department of Teacher Education
Department of Physical Education
Department of Vocational Education
Third Department of Higher Education
Department of Education for Minority Nationalities
Department of Graduate Studies
Bureau for the Affairs of Retired Cadres
Computer Center for the SEdC
National Educational Teaching Center
Office for World Bank Loan Affairs
Department of General Supplies and Construction

Figure 4:
Organization of the State Education Commission in China (1985 -1988)

Second, the distribution of power in educational administration. The key word here is decentralization.

The former MOE exercised too much rigid control over schools, especially over universities and colleges, in the areas of personnel affairs, funding, student enrollment and job assignment, capital construction and academic exchanges with foreign schools, leaving school authorities little say in all these matters. Such tight controls dampened the enthusiasm of local educational administration to run their own schools. In the past three years, although the SEdC has made some efforts in delegating greater decision-making powers to provincial, municipal, and autonomous regional governments as well as to major universities across the country, it still holds tremendous powers in its own hands. Lessons from American educational reform show that necessary reconstruction of schooling must take place from the "bottom up," not "the top down" (Goodlad, 1984). Teachers and educational administrators at the grass-roots levels, rather than policy makers at the top, are therefore the key forces in educational reform. Without them, policies and plans made at the top are only pies in the sky.

The third area in need of reform is the application of the three administrative principles. The mass line, democratic centralism, and collective leadership have approved themselves to be very useful administrative tools in the past, especially during the earlier years of the Chinese Revolution. However, the linear and top-down model of educational administration in China has, to a certain degree, turned the application of these principles into an incomplete learning process, as is shown by Figure 3. Ideally, a democratic administrative model of "from the masses, to the masses" should be like this:

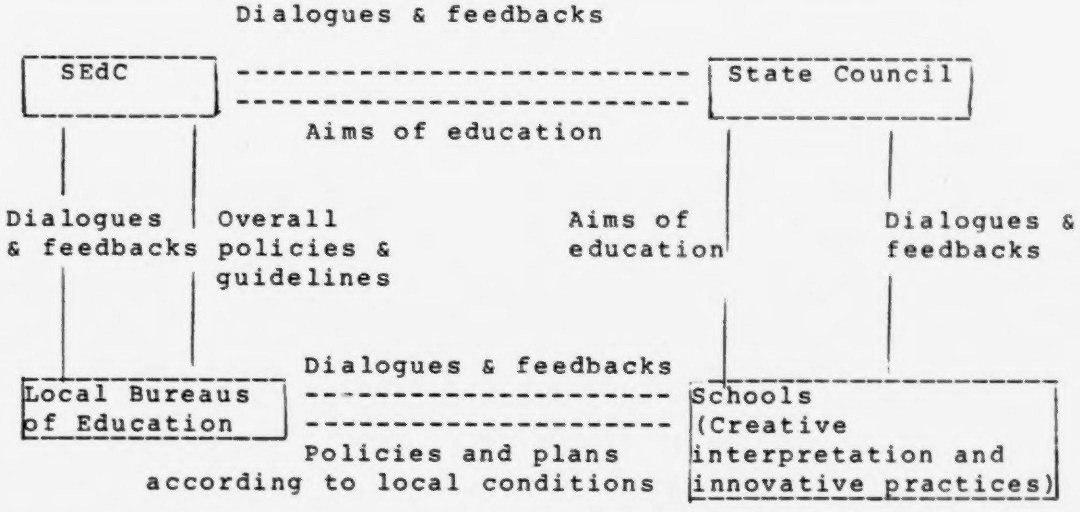
Dialogues & feedbacks
SEdC
State Council
Aims of education
Dialogues & feedbacks
Overall policies & guidelines
Aims of education
Dialogues & feedbacks
Dialogues & feedbacks
Local Bureaus of Education
Schools (Creative interpretation and innovative practices)
Policies and plans according to local conditions

Figure 5: A Complete Learning Process

Such a model ensures a never-ending learning process.

It requires broadly defined but clear goals for each level in the administration, decentralization of policy-making powers to a considerable degree, promotion of democracy, and development of genuine understanding of the ideas and feedbacks from the lower levels. Modern research techniques, computers, various information-gathering personnel and devices can be used to facilitate this process. It is important that our leaders and policymakers learn what the masses really think and feel, not just what they would say in official meetings and discussions. This requires them to go down to the grass-roots levels on a regular basis, visit the masses, befriend the masses, listen to their complaints, and show real concerns for the welfare of the masses.

Fourth, the quality of staff members. China had had no formal training programs for educational administrators until very recently. Consequently, nearly all of the staff members in the SEdC have no idea or knowledge with regard to theories in educational administration. There is an urgent need to establish both pre-service and in-service training programs for our educational administrators. Besides decision-making and organization theories, our cadres should learn the basic skills in educational research and the trend in modern educational technology. The hope is to socialize our self-disciplined cadres into the role of reflective and creative educational administrators. In Britain and in some states in the U. S., persons who work for departments or commissions of education are required to pass civil service examinations. Although I do not like the idea of testing because test scores often lead to lopsided interpretations, I do believe that this kind of exams can screen out those who lack the basic knowledge and skills to be an administrator.

The final area of concern is the supervision of educational administration. In China, both educational policy making and policy implementation are carried out by the same administrative organizations--the SEdCs at the central and local levels. The advantage of such a system is that once a good policy is made, it can be effectively implemented throughout the country. Yet the danger is equally great. If a bad policy is made, our whole educational system will suffer. We need an organization or a group of experts whose sole task is to supervise the work of educational administration, especially that at the central level, so as to prevent them from making grave mistakes.

Concluding Note

To summarize, educational administration in China has followed a linear, top-down, and rational model, which has both advantages and disadvantages. The abolition of the MOE signified an answer to the call for structural reform from the Central government and the larger society. And the establishment of the SEdC has created new hopes as well as challenges to old problems.

To meet the needs of modernization, central educational administrators in China must engage themselves in a continuing process of inquiry and reform. There are at least five areas in need of their immediate attention: the structure of their organization and work; the distribution of power; the application of the three administrative principles; the quality of staff members; and the supervision of educational administration.

Finally, in studying educational policy, governance, and administration, we should recognize that any theoretical model is itself a somewhat arbitrary interpretation imposed on organized activity and any model involves trade-offs and unavoidable weaknesses. As long as we keep this in mind, we should feel free to apply models and perspectives from organization theories in our studies and make recommendations for reform.

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EXPANSION OF HIGHER EDUCATION IN CHINA (1977-87): PROGRESSES, PROBLEMS, AND POLICY IMPLICATIONS*

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Abstract

The first post-Mao decade witnessed a phenomenal expansion of Chinese higher education together with its structural reform. This paper reflects upon the expansion process and presents a policy analysis of the problems incurred in the expansion. The underlying forces accounting for the enrollment growth are first examined. Secondly, policy guidelines for expansion and their implementation are described. Thirdly, a discussion is made of the limitations for further expansion in the coming years. Finally, some general observations are offered for rational policy-making in higher education expansion in the Chinese context.

Worldwide the most phenomenal expansion took place in the sixties and, for many countries, continued into the seventies. For China, this was unfortunately a period when its higher education experienced the most drastic decline and was actually stopped for years owing to the political turmoil of the "Cultural Revolution". Along with the launching of the modernization program in late 1970's, the past decade has witnessed remarkable developments and thorough-going reforms in various aspects of the Chinese higher education system, and the most notable among the changes has been the large-scale, steady expansion of the system. Based on official statistics and relevant literature, this paper is intended to describe the actual expansion achieved in Chinese higher education during the decade of 1977-87 and offer some analysis of policy issues of higher education expansion in the Chinese context.

I. A Profile of Expansion

Looking back to the several decades after the founding of New China in 1949, we could readily see that there have been drastic ups and downs in the development of higher education. However, in terms of the rate of growth and size of college enrollment, the development of higher education under discussion constitutes the most noteworthy "upward movement" and it distinguishes itself from the previous ones in the following ways.

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* This paper is partly based on a chapter in the author's doctoral dissertation titled "Higher Education Reforms in Contemporary China". The writer would therefore like to thank Professor Philip Altbach for his many useful comments on its first draft.

First, its take-off started after a most drastic decline in college enrollments and an actual stopping of operation of the whole system because of political disruption;

Secondly, it took place in a totally new socio-economic setting as a response to the most ambitious modernization program unprecedented in the history of China;

Thirdly, the policies for expansion in this period are solidly based on the more reliable trained-manpower needs forecasting and rational analysis of resources available and it is, therefore, unlikely that there will be another abrupt "drop-down" in college enrollment though the rate of expansion has been leveling off;

Fourthly, the policy for expansion, as whole, has been more deliberately and successfully translated into practice both at national and local levels;

And fifthly, the quantitative expansion of enrollments has been, from the beginning, simultaneously planned and implemented with internal structural reforms in higher education.

In a span of ten years beginning from 1977, the number of formal universities and colleges increased from 404 to 1,063 (China Education Gazette, No. 490, 1988), a 2.38 times increase. For the period of 1983-85 there would be a new institution springing up every three days (Cheng Kaiming, p. 250). The total enrollments in the formal sector of higher education increased from 625,319 to 2,017,900 (Department of Planning, SEdC, 1986, p.20), a 3.2 times increase. The initial base being very small, the rate of increase in the number of graduate students seems more remarkable: from 10,934 in 1978 to 120,000, a nearly 11 times increase. The expansion of nonformal, adult higher education in the same period was equally tremendous. Though the increase in the number of institutions seemed quite small, the enrollments grew notably from 1,408,295 in 1978 to 1,875,000 in 1987 (China Education Gazette No.490, 1988).

The expansion of enrollments, programs, and institution of higher education has been most remarkable in the newly emerging areas of study such as law, economics/finance, business administration, and those related to service industry and light industry engineering, in which China has a severe shortage of qualified, college-educated manpower.

II. Socio-Economic Demand for Trained Manpower

An Irresistible Pressure for Expansion

The expansion of higher education in the last decade is attributed to various factors. Notable among them are the following.

1. Demands for specialized manpower by the expansion of the national economy

Modern economy is based on science and technology, which account for 60% or more of the increase in productivity. In 1979, engineering/technological personnel accounted for only 3% of the workforce in industrial sectors while in agriculture only 0.05% were trained agricultural technical personnel (Huang Zhang, 1985, p. 2).

The growth of new industries in China has created demand for a varied reservoir of skills. In 1981, a demand of roughly 520,000 college graduates was made by central and provincial/municipal/autonomous regional institutions, and only half the number of graduates could be provided by universities and colleges. According to manpower needs forecasting, there was a national need for 1,500,000 college graduates for the economy during the Sixth Five-Year Plan period of 1981-85, and again, only 50% or so of the demand could be actually met (Yang, 1984, p.5)

2. The immediate, enormous need to raise the educational level of the nation.

According to the third national census in 1982, only 7.22% of the Chinese population had had an upper secondary or higher education; at the other end of the spectrum, 23.5% of the population were still illiterate or semi-illiterate. (Zhang Suihua, 1988).

As an important indicator of educational level of a nation, the number of college-educated persons per 10,000 inhabitants in China is very small. According to the third national census in 1982, there were only 60 who had a college education or beyond (op. cit.). College-educated, plus college-enrolled , accounted for only 0.9% of the population in the age cohort of 25 years and older. In contrast, according to Unesco statistics, the percentage for the same age cohort was 14.4% for Japan (1980), 31.1% for the USA (1979), and 7.2% for the USSR's 20-and-over population (1970) (Yang, 1984, p.5). The percentage for

China was lower even than many other developing countries.

In term of college enrollments per 10,000 inhabitants, China ranked the 129th among 137 countries under a Unesco survey. There were only 19 college students in every 10,000 inhabitants in China in 1982, as compared with 269 for the USA (1976-77), 196 for the USSR (1979-80), 151 for Japan (1977-78), 46 for Iran (1976-77), and 37 for India (1976-77) (Yang, p.5).

It can be seen clearly from these figures that the educational profile of the Chinese workforce and the whole population is much lower than what is expected if China is to achieve the grand goal of the four modernizations.

3. High pressure from college-aged youth and their parents for accelerated expansion of higher education

China has had a long tradition in valuing education as a pre-requisite for making contribution to nation building and as an important avenue for personal achievements. In recent years, along with the launching of the modernization drive, meritocratic values have been strongly advocated which stress firm, objective, professional standards based on educational qualifications for distribution of material rewards. Largely inspired by strong desire to better contribute to the prosperity of their motherland and to some extent thrusted by pragmatic, materialistic considerations of promotion of their socio-economic status, the broad masses of college-aged young people and their parents place their highest hopes on higher education and strongly demand a high-rate increase in college enrollments. Being aware of the inevitably increasing value of knowledge and skills, many people look to higher education as a major gate leading to respected, well-paid jobs in a new social setting.

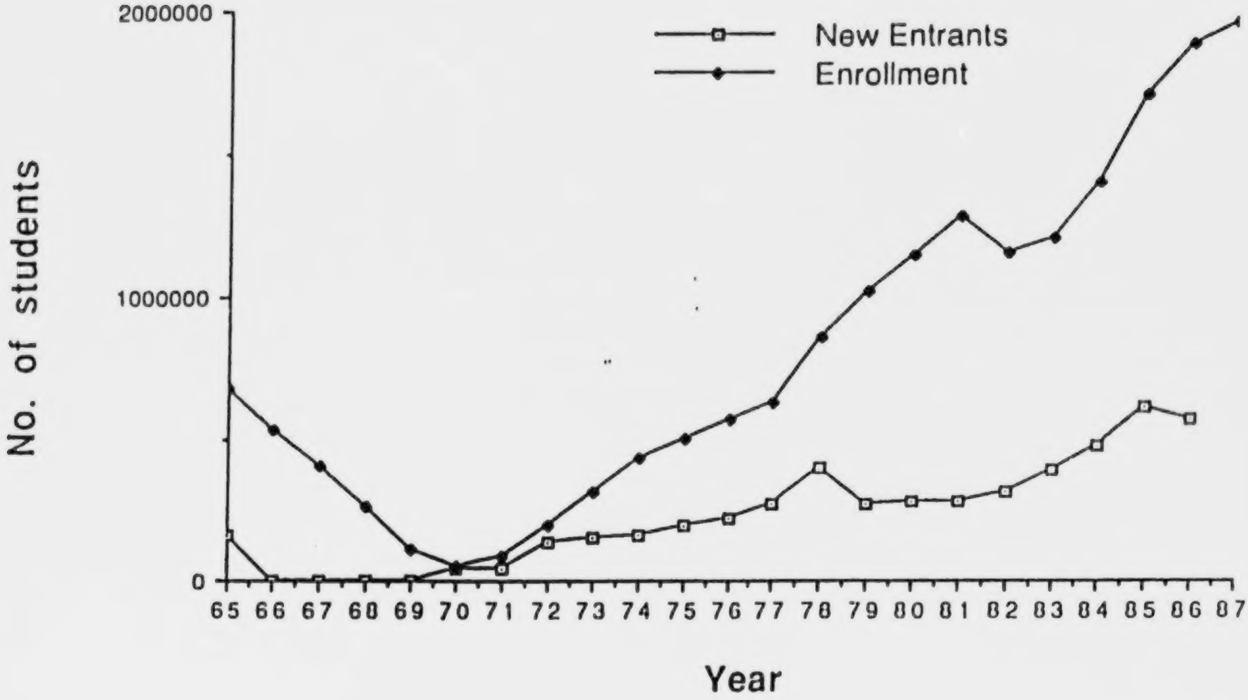
Enrollment Ratios at Secondary and Higher Levels

	China	Developing Countries	
		middle income	low income
Secondary School (1978)	51	41	36
Higher Education (1977)	1	11	3

(Source: adapted from the World Bank, World Development Report, 1981, p. L11)

On the other hand, the higher education system in the late 1970's was much limited in its enrollments, as could be seen from the following table.

Figure 1: Change of College Enrollments (1965 - 1987)



Source: Based on official data from the State Education Commission, 1965 - 1987

29

The increasing demands on the part of college-aged youth and the low college enrollment ratio created a high tension, which must be reduced not only from educational points of view but also in the interests of social stability.

4. The large-scale expansion of secondary education and its irrational structure made the competition for college entrance more intense and thereby challenged higher education for enrollment expansion as one way to reduce competition

As a result of the adverse effects of the "Cultural Revolution", secondary education in China became disproportionately unitary by the mid 1970's. Secondary vocational/technical education was virtually abolished, and more than 90% of junior high school graduates went into general senior high schools. The number of senior high school graduates jumped from 675,500 in 1970, to 3,494,400 in 1973, and to 5,172,200 in 1976 (Wang Wenyou, p.11), an almost 7.6 times increase in a period of six years. On the other hand, universities and colleges enrolled zero in 1970, 150,000 in 1973, and 217,000 in 1976. This means that only a small fraction of senior high graduates had the access to higher education, with the lowest enrollment ratio standing at 3.5% in 1979. What's worse, since no vocational training was provided to high school students, the great majority of senior high graduates who were not admitted by colleges lacked necessary occupational skills for productive employment. All is helped in creating a severe situation of, in Chinese terms, "millions of armymen awaiting to cross the river through a one-plank bridge". College-entrance examination, which seemed to "determine the life career of millions", became a "steering rod" of the whole education system. The tighter the "bottle neck" of higher education, the greater the pressure exerted on the system.

With tensions created in many aspects of the social life as a result of this intense competition for college education, it is only more than obvious that simultaneous strategic measures should be taken to reduce the tension: one was to channel an increasing percentage of secondary school students into vocational/technical education programs and the other was to expand college enrollments at a rate as high as desirable and possible.

III. Policy Guidelines for Expansion and Their Implementation

The expansion of college enrollments started shortly after the downfall of the "gang of four" in 1976. Enrollments increased remarkably from 564,715 in 1976 to 856,322 in 1978 and 1,279,472 in 1981 (Department of

Planning, SEdC, 1984, p.50). However, major planned overall expansion of the higher education system did not take place until 1983.

On April 28, 1983, the State Council approved and issued a report submitted by the Education Ministry and the State Planning Commission on Accelerating Higher Education Development. This was the first major official document to be guiding the expansion in the years that followed. It requested implementation, of policies laid down in the document, by education authorities at all levels in accordance with their concrete conditions.

Based on instructions from the top leaders and on the new developments already taking place after 1977, the Ministry of Education and the State Planning Commission made a major decision for "a planned, proportionate large-scale expansion" of higher education as "an urgent major undertaking" in a five year period (1983-87) or so (Office for Study of Educational Policy, SEdC, 1985, p.78). They also made macro projections for the expansion as follows:

1) Annual admissions in the formal higher education sector were to be increased from 315,000 in 1982 to 550,000 in 1987, or a 75% increase, while total enrollments would increase from 1,153,000 to 1,760,000, a 53% increase, or, on average, an annual increase of 121,000 new entrants over the previous year (op. cit.).

2) Other forms of higher education, including TV colleges, correspondence colleges, enterprise-sponsored workers' colleges, county-level farmers' colleges, colleges of administrative cadres and institutes of education for in-service teacher training, should be developed at a faster rate while ensuring their quality. Annual admissions in this nonformal higher education sector were to increase from 290,000 in 1982 to 1,100,000 in 1987, or a 2.8 times increase, with a total enrollment expansion from 640,000 to 2,370,000, or a 2.7 times increase (op. cit., p. 79).

In view of the small proportions of students in 2-3 year institutions on the one hand and of the urgent needs for trained manpower at this level on the other, the planned admissions by all types of higher education were to take place mainly in 2-3 year programs, especially in fields of engineering and technology.

Policy guidelines for the planned expansion include the following:

1) Since the national economy is in the process of "readjustment, transformation, consolidation, and improvement", the expansion should be made with great

efforts in overcoming difficulties and with attention paid to actual possibilities;

2) The policy of "walking on two legs" should be continuously implemented, diversified means employed, and the initiatives of every sector brought into full play;

3) Together with the expansion, an internal structural reform of higher education should be facilitated to increase the proportion of 2-3-year institutions and programs in fields of study in which there are great and immediate manpower needs;

4) Quality standards should be set for different levels and continued efforts made to strengthen "key" universities and programs;

5) Over-all planning should be made to ensure a steady increase in admissions and to prevent drastic ups and downs which will result in difficulties and waste.

Both at national, local and institutional levels, these policy principles are supposed to be observed to achieve the policy goals. The planned expansion has been implemented in the following ways.

1) Potentials of existing conventional universities, especially those "key" ones, were tapped. One indicator of their potentials was the low faculty/student ratio. In 1978, the average ratio for formal higher education was 1:4.15; and in 1983, 1:3.98 (Department of Planning, SEdC.). The ratio for 'key' universities was even lower, 1:3.3. In contrast, the world's average ratio was 1:14, 1:18 for Britain, 1:20 for France, 1:20 for the USA for federally-supported universities and 1:16.7 for state universities, and 1:11 for the USSR (1976) (Zhou Beilong, p. 3). A second indicator was the number of faculty members assuming no teaching responsibility. As of 1978, 51.8% of full professors, 35.7% of associate professors, and 29.1% of lecturers had no teaching tasks. Although the percentages dropped in 1983 to 27.6%, 14,3%, and 12.2% respectively (Department of Planning, SEdC), they still implied a kind of potential capacity to enroll more students. Thirdly, physical facilities, though limited, could be tapped through improvement in university management and through administrative measures.

In view of the above, conventional universities were encouraged to enroll as many students as their resources permitted. Branch campuses or extension evening colleges were set up; 2-3 year programs were sponsored; more commuting students were enrolled to solve problems caused by limited dorm spaces; and a large part of the 3 million square meters' college buildings still occupied by non-educational institutions by 1980 was returned to allow for increased enrollments.

2) More than one hundred local (mainly municipal) vocational colleges were set up in response to the needs of local economic development. These newly established colleges were characterized by charge of tuition, commuting students, and self-seeking of employment opportunity by the graduating students rather than the college in the name of the state.

3) The nonformal sector of higher education was developed to a large extent. The system of higher education was much more diversified to include various forms of higher learning other than the conventional university. The enrollments of Radio & TV Universities increased from 167,962 in 1980 to 673,634 in 1985; enrollments of workers' colleges increased from 68,479 in 1980 (Department of Planning, SEdC, p.95) to 339,415 in 1986; for colleges of administrative cadres, from 0 in 1980 to over 55,000 in 1986; for institutes of education, from 42,089 in 1980 to 259,885 in 1986 (op. cit.).

4) A large number of new institutions were set up, especially in such fields as economics/finance, law, high technologies, and applied liberal arts most closely related to local economic development needs.

5) Public expenditures and capital investment for higher education were increased. The former increased from 1.913 billion yuan in 1980 to 3.272 billion yuan in 1984; and the latter increased from 0.9 billion yuan in 1980 to 2.663 billion yuan in 1985 (Department of Planning, 1986, p. 104).

Beginning from 1985, there was an increasing awareness that the rate of expansion went beyond the actual capacity of the national economy and the higher education system and that the quantitative growth was having adverse effects on the qualitative development of higher education. Along with discussions in the media, there began a readjustment by the State Education Commission in policies regarding higher education expansion in the coming years. First, in an attempt to check on the seemingly uncontrolled increase of new institutions, the State Education Commission took back the power to approve and accreditate new institutions. The aggregate number of higher education institutions was strictly controlled. Secondly, the Commission made it very clear through policy statements that the priority of higher education development should be shifted from quantitative expansion to quality improvement of existing institutions, especially of "key" universities as 'flagships' of higher education (See Li Peng, 1986; Liu Zhongde, 1986, 1987; Zhu Kaixian, 1987).

When reviewing achievements made in the period under discussion against the policy goals set forth in 1983, it could be observed that:

1) policy guidelines for expansion were based on a more realistic assessment both of the demands for trained manpower and of the resources available at disposal and were, therefore, more rational than those made in the previous decades;

2) the planned expansion has been as a whole, successful in terms of enrollments and proportions of students for different levels and fields of study.

IV. Difficulties and Problems : Limitations on Further Expansion

In terms of the enormous needs for trained manpower and of the very low educational level of the population, the rate of expansion could well be justified, and continued expansion would be even desirable. However, the actual availability of financial, material, and human resources set limitations on both the rate and scale of expansion. Major limitations and problems include the following:

1. The rate of expansion of higher education went beyond the actual capacity of the state in providing increased resources to support the proposed expansion

Higher education is highly resource-intensive. Especially in developing countries, it faces intense competition for scarce resources from other sectors of the economy. The expansion of higher education has to be in line with the rate of increase of public expenditures spent on higher education, or great constraints will be created and financial/material difficulties incurred.

To some extent the increase in college enrollments in the period under discussion was achieved at a rate higher than it should be. For example, enrollments in 1980 increased 33.17% over 1979 while public expenditure on education increased only 16.65% (Wang, p.13). For the period of 1982-85, the number of formal higher education institutions increased from 715 to 1016, at an average rate of over 100 new institutions each year. The total enrollments rose from 315,000 to 619,000, an average annual increase of 25.28%. Adult education expanded more quickly for the same period, with 1216 institutions and total enrollments of 1,725,000 in 1985, an increase of

66.24% over 1984. In contrast, the annual increase in national income for the same period was only 16.92%, that in state monetary revenue was 18.32%, and that in public investment in education was 14.12% (Huan Zhang, p. 21).

In the words of one vice chairman of the State Education Commission, "In terms of the supporting conditions of financial, material, and human resources provided by the national economy, if the rate of expansion is not controlled in time , t here will arise difficulties in higher education and result in decline of quality." (Liu Zhongde, p.2)

It was from worries of this kind that the State Education Commission restored its power in approving the establishment of new colleges and their accreditation. At the end of 1986, the State Council issued Regulations on the Establishment of Regular Higher Education Institutions. Regulations on the Establishment of adult Higher Education Institutions was also formulated and was under review and discussion. Strict restrictions were set for the number of annual admissions and on the size o f existing universities. At least for the Seventh Five-Year Plan period (1986-90), strict control will be put on further expansion in the interest of quality improvement.

2. Both quantity and quality of faculty members are inadequate to meet development needs of expanded higher education

In terms of faculty/student ratios, there seems to be room for further high-rate expansion. However, a careful examination of the real situation will reveal that the potential in this regard is in fact very much limited.

First, the educational qualifications of faculty are not so satisfactory. As in 1984, only 6.94% of college faculty members had graduate education, 78.68% had only undergraduate education, 12.20% had only 2-3 years higher education, and 2.18% had even less than two years of education at college level. As China did not introduce academic degree system until 1980, the percentage of faculty holding graduate and professional degrees was very small. Only 0.38% of faculty held doctoral degrees, 3.13% master's. In terms of academic ranks, full professors accounted for only 1.41% of the faculty and associate professors 8.96% (these two percentages were not only much lower than those in developed countries but also lower than the 43.25% for China in 1950). Lecturers constituted 43.38% of the faculty, while instructors were ranked 10.08% and teaching assistants, over 36.17% (Wang, p.12).

Secondly, more than one third of college teachers in China are teaching assistants who have recently completed their undergraduate education and are not competent for college teaching. In contrast, in American and other Western academic systems, much of the kind work done by these assistants are undertaken by graduate students, who are not counted when faculty/student ratios are calculated.

Thirdly, Chinese universities have a very low percentage of part-time faculty, who usually have a light workload. In 1980, they accounted for only 4.26% in the faculty, while the full-time/part-time faculty ratio in the American universities for the same year was as high as 100: 71 (Wang, p.11). If faculty/student ratio is based on the number of full-time faculty , then the figures won't reflect the true picture.

Fourthly, there remains a shortage of qualified faculty members especially in fields of advanced technologies, biological sciences, management science, business administration, economics, and some applied social science disciplines and interdisciplinary studies. In view of the limited number of Chinese graduate students both at home and abroad, it will take years for faculty positions to be filled by qualified professionals and scholars who have obtained graduate education.

Fifthly, because of the flaws in the labor and personnel system, it is still difficult to transfer or remove those faculty/staff members who are not qualified for teaching/administrative positions. Not until the introduction of "responsibility" and appointment systems was the situation being improved.

Sixthly, as working and living conditions of Chinese faculty members are less satisfactory than those of their counterparts in developed countries, their great potentials can not be brought into full play. On an average, at least three hours a day have to be spent in labor-intensive household chores for a middle-aged faculty member, who constitutes the backbone of the teaching force.

3. Relatively weak foundation of secondary and primary education

The expansion of higher education has to be based on the development of secondary and primary education. In the Chinese circumstances, the relatively low qualifications of school teachers pose restrictions on the expansion of college enrollments. At the same time the necessary increase in the percentage of public expenditures spent on school education means that the share of the expenditure for higher education will have to be restricted.

In terms of educational level, in 1985, only 5.6% primary school teachers, 21% junior high school teachers, and 56% senior high school teachers were considered qualified (Zhou Beilong, p.7). According to a national survey of specialized manpower conducted in 1983, about 4 million teachers did not have an education beyond secondary specialized education. Among the 2,445,000 secondary school teachers who had an education beyond specialized secondary level, only 12.8% had a 4-5 college education, 21% had a 2-3 year college education, and 66.2% had only a specialized secondary education (Zhang and Zhou, p.325). As the quality of higher education depends, to a large extent, on the quality of secondary education, which depends, in turn, on the qualifications of school teachers, this high percentage of unqualified teachers constitutes a big obstacle to qualitative growth of higher education.

Higher education in China has always taken quite a large share in public expenditures on education. In recent years, it usually accounted for 20% or more; capital investment in higher education accounted for 60% of the total amount of capital investment in education (Department of Planning, SEdC, 1986, p.104). In 1985, the annual public expenditure per primary pupil per year was 47.3 *yuan,* that for a secondary school student was 18.54 *yuan,* while that for a college student was as high as over 2,000 yuan (Liu Bin, Guangmingribao, January 11, 1987). The ratio of public expenditures on primary, secondary and higher education was 1: 2.72: 52.37 while the ratio for Japan was 1:1.46:5.7, and that for the USA was 1:1.39:4.36(Liu Bin, 1987). In this case, if the rate of higher education expansion is not controlled, it will, no doubt, adversely affect the development of basic education, which will in turn affect the higher education itself. One solution to this dilemma is to shift the focus of higher education to qualitative development and to restrict its share in the public expenditures on education, thereby devoting a greater share of resources to secondary and primary education.

4. Financial and material resources available can not sustain a continued high-rate expansion as was the case in the early 1980's

Despite the demands and appeals made by the education sector, the percentage of public expenditure on education fluctuated around 11% in the national budget, failing to meet the needs of proposed expansion and to catch up with many other countries, which had maintained 15-20%.

As a result of insufficient state capital investment in higher education institutions, one serious difficulty arises in providing adequate college buildings. Though the state made a total investment of 7,368,000,000 yuan in basic construction during 1976-84, the investment accounted for only 70% of what was actually required for the planned expansion of college enrollments. Moreover, up to 1986, there were still 1.4 million square meters of the former college buildings occupied by non-educational institutions (Wang, 1986, p.14). Another entailed constraint, which hampered high-rate expansion, is the serious shortage of students' dorms since traditionally all college students were required to live on-campus. For many colleges, the average dorm space per student was reduced to only 2.5 square meters as a result of the expansion in the 1980's (Wang, p. 15). For various reasons, the widely advocated approach of commuting system is actually difficult to implement in the Chinese context.

V. Policy Implications: Some Concluding Remarks

"Policy is only the beginning of a realistic appraisal of higher education" (Altbach, 1986, p.7,). A decade of expansion has provided manifold experiences upon which we could reflect so as to derive insights into relevant policies in planning higher education expansion in the Chinese context. Among other things, the following general observations and suggestions can be made.

1. The rate and scale of expansion should be in line with the level of economic development. Full consideration should be taken of both the needs for enrollment growth and the resources available for possible expansion.

The rate of college expansion is not something which can be manipulated arbitrarily by individual will. Rather, it is conditioned by various internal and external forces. The interactions between economic and educational development should be interpreted in a dialectic way. While economic development depends on education for qualified manpower, it conditions, in a decisive way, the rate of educational development through the provision of financial, material, and, to a large degree, human resources.

2. The principle should be adhered to that higher education expansion be deliberately planned in such a way that it is proportionate to the development of other socio-economic sectors and of other parts within the education system. While it is desirable for the higher education system as a whole to expand, it might be necessary to restrict or even reduce the size of certain components of the system. There should not be, to use a Chinese term, a "one cut and same slice for every one". Also, what's worth much attention is that efforts be made to consolidate the quantitative expansion through quality improvement and to avoid drastic ups and downs.

3. Quantitative expansion should not be achieved at the cost of quality.

4. Multiple approaches to expansion should be encouraged. The policy of "walking on two legs", which has± been in operation for many years, has been proved effective and should be sticked to. Both formal and nonformal forms of higher education should be attended. Especially for a developing country like China, which is limited in its resources for education, various forms of adult higher education should be fully developed since they are less expensive, more flexible, more job-related, and therefore more cost-effective. They should continue to be an important substitute for formal university education in many specializations, especially in vocational, applied fields.

5. Expansion of higher education should be planned in close relation to the adequate development of secondary and primary education.

6. Care should be taken as to choosing between establishing new colleges and expanding the existing ones. In the present circumstances, priority of development efforts should be placed on the latter as conventional universities, especially those "key" ones, have more qualified faculty members, better material facilities, and more adequate financial resources. They have much potential to be tapped for further expansion, and this will be a more economical way to increase total college enrollments.

7. Rigorous accreditation standards and strict evaluation procedures should be developed so as to ensure that newly established institutions meet basic professional standards and that the existing programs constantly improve their quality while expanding in quantity.

8. Expansion should not be over-centrally controlled. While over-all planning and management should be strengthened at the 'macro' or national level, the decentralization process should be continued and firmly carried forward. Greater power need be delegated to provincial, municipal, autonomous regional and even to institutional authorities in planning enrollment changes as they are more aware of the actual manpower needs and resource availabilities at their disposal. National long-term manpower needs forecasting, while necessary and useful in facilitating a holistic perspective of manpower scenarios and a balanced development approach, care should be taken that policies be not based solely on it, as "projecting manpower requirements have proved problematic

in numerous countries" (The World Bank, 1986, p. IX) and also in China. Market forces should be coordinated more into the planning mechanism, and flexible changes made in relevant policies.

9. Quantitative expansion should be planned simultaneously with structural reorganization within higher education by levels, fields of study, and geographical locations. In the Chinese context, still more efforts should be devoted to 2-3 yea r short-cycle higher education for the training of mid-level technical workforce especially in industry-related applied fields. More programs and larger enrollments should also be planned for such fields as law, economics, finance, management, and light-industry. And more attention should be devoted to higher education development in economically underdeveloped or developing regions.

10. Demographic trends and projections have to be taken into more serious considerations when making long-range plans for expansion, and methodology of educational statistics has to be further improved according to international standards. The sheer number of the enormous college-aged young people in China has many implications for policy-makers and planners of higher education.

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CURRENT REFORM IN HIGHER EDUCATION OF CHINA

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After the Communist Party had seized political power, China set up its new higher education system, modelling on the Soviet pattern while changing the old higher education system left by the Kuomindang government. Although different words were used to express the purpose of its higher education, the major principle of higher education was to serve the proletarian politics and to integrate with production. Higher education system was regarded as a useful tool in consolidating political power and in improving production. In the past few decades, higher education system in China has experienced several reforms. Specifically, major reforms took place in 1952, 1958 and 1966 respectively. Another major reform in higher education has been underway since Deng Xiao-ping returned to office in 1978.

In this paper, I'll first shed light on the background of the current reform in higher education. I'll then analyze the focal points of the reform. Some speculations and prospects of the reform will be discussed in the conclusion.

(1) Background of the Reform

In China, one of the serious problems in higher education is the inappropriate structure and unbalanced composition of disciplines. In the past few decades, enrollment plans failed to fully reflect the social needs. State job assignment for all college graduates suffered quite a few drawbacks: employing units did not treasure and make good use of qualified personnel; students' enthusiasm and commitment to progress were not fully mobilized (Dong-chang He, 1985). Table 1 portrays the percentage breakdown of undergraduate students by fields of study. It can readily be observed that the proportion of students enrolled in the humanities and social sciences (including management) is too small. In addition, the composition of higher education enrollment has long been irrational.

Table 2 indicates the breakdown of higher education enrollment by level in selected fields. We can see that nearly 77% of the students enrolled in regular 4-5year programs and 23% in short-cycle 2-3year courses. A sizable portion of the latter are enrolled in teacher training programs while in engineering and agriculture, short-cycle enrollments are relatively insignificant. A number of inquiries have been made which show that there are many positions in each major field of employment which can be satisfactorily filled with people who have had 2 to 3 years of training and that the skills of many students with 4-5 years of training are underutilized. In developed countries, the ratio of engineers to technicians normally ranges from 1:3 to 1:10, whereas in China the reverse is often the case. For instance, among the Shanghai shipyard technical personnel, engineers and technicians should be recruited in a ratio of 1:10, but the graduates from 4-5 year colleges or universities have been allowed to dominate because of the lack of short-cycle higher education graduates (Jan-Ingvar Lofstedt, 1984). It is obvious, since the high-level experts who are trained in major institutions with the lengthiest courses exceed in number the middle-level technologists and technicians who

Table 1: Percentage Breakdown of Undergraduate Enrollments by Fields of Study

Percentage Breakdown of Undergraduate Enrollments by Fields of Study

Year	Total	Engineering	Agriculture	Forestry	Medicine & Pharmacy	Teacher Ed.	Humanities	Natural Sciences	Finance Economy	Politics and Law	Physical Ed. & Sports	Art
1949	100	26.0	8.4	0.5	13.1	10.3	10.2	6.0	16.6	6.3	0.2	2.4
1952	100	34.8	6.9	1.1	13.0	16.5	7.1	5.1	11.5	2.0	0.2	1.9
1965	100	43.8	7.9	1.5	12.3	14.0	6.8	9.2	2.7	0.6	0.6	0.6
1977	100	33.4	8.6	1.1	15.0	26.4	5.6	6.7	1.3	0.1	1.0	0.8
1978	100	33.6	6.3	0.9	13.2	29.2	5.4	7.5	2.1	0.2	1.0	0.6
1983	100	34.7	5.7	1.1	11.6	26.0	5.6	6.6	5.9	1.5	0.8	0.5

Table 2: Higher Education Enrollment in Selected Fields

Duration of study	Total	Engineering	Agriculture	Teacher training
4-5years	929,319	369,524	56,117	155,791
2-3years	217,504	49,021	11,834	156,649

receive training of shorter duration, that there is a great waste of manpower, which reduces the economic effectiveness of higher education.

Another serious problem with Chinese higher education is its administrative system. The central authority exercises too rigid a control over the institutions of higher education, thus depriving them of their vitality. The state takes on too much of what ought to be done by the institutions of higher education, thus dampening their enthusiasm to run schools. Within colleges and universities, the main problems facing management are the over concentration of power and the practice of "everybody eating from the same big pot". The over concentration of power has led to the overloading of the institute leadership with routine matters. Haggling and shirking of responsibility occur everywhere. These tasks take up a lot of time and leave little time for the deliberation of major issues. With the practice of "everyone eating from the same big pot", those who work hard stand to lose, and their frustration dampens their enthusiasm. Loafers, on the other hand, stand to gain, thus encouraging them to be idle. Such practice, in essence, represents the legitimation of partial exploitation of other's labor under socialism (Pei-zhen Yang, 1987).

(2) The Program of the Reform

China has a Communist Party as its party in power. The Central Committee is the highest leading body in the Party. It is a common practice that documents of most significance are ratified by the Central Committee of the Party. The programmatic document concerning educational reform in China was ratified by the Central Committee of the Party.

The Third Plenary Session of the Twelfth Central Committee held in 1984 made the decision on reforming the economic system. This session predicted that " Along with the reform of the economic system, reforming both the scientific and technological system and the educational system is becoming a more urgent strategic task". It took nearly eight months from the establishment of a drafting group to its formal publication. In the process of drafting the document, eleven revisions were made among which two were made by the Secretariat of the CCCP. In the end the Political Bureau discussed the document and approved its publication. Before that, the draft was distributed down to provinces, autonomous regions, municipalities, the central agencies, democratic parties, and other people's organizations for their opinions. In addition, a number of symposia were held in order to solicit opinions from those responsible for education, from experts, and from Chinese-American scholars. A rough statistic shows that people who have participated in the discussion of the document totalled over ten thousand (Dong-chang He, 1985).

It is obvious that the campaign for reforming higher education in China was mobilized by its highest leading body. The program of the reform fully embodies the intention and strategic priority of the Party. All this indicates that the reform in higher education has been placed on the major agenda of the highest policy making body and this is seldom seen in China.

(3) Focal Points of the Reform

In China, the general guideline for reforming higher education system is that the structure is to be readjusted to suit the needs of the society as a whole, so that the institutions of higher education will have the enthusiasm for meeting the needs of economic and social development and have the ability for self-readjustment (Dong Chang He, 1985).

Substantial efforts have been made to change the structure of higher education as required by the economic development. In view of the fact that the proportion of students enrolled in the humanities and social sciences (including management) are too small to meet the needs of the national economy, steps are being taken to expand the training of students in these fields. Since engineering students are relatively abundant, an expediency of diverting a portion of them to undergo further training in management sciences is being implemented. At the same time, great emphasis has been put on vigorous development of short-cycle higher education to produce more middle-level and semi-specialized personnel in science, technology, and administration. As a result, a kind of short-cycle vocational universities very different from the more familiar elite schools, have emerged in large numbers. Locally funded, they are more flexible and responsive to local needs. Unlike their counterparts at "regular" universities, students at these schools must pay tuition, are not provided with stipends or free medical plans, and are not part of a guaranteed job allocation system. They make it possible for small and medium-sized enterprises to recruit college graduates. The recent growth rate of these institutions is impressive. By the end of 1983, 52 such institutions had been set up, and in 1984 alone, of the 84 new higher education institutions established, 30 were short-cycle vocational universities (China News Analysis 1290, August 1, 1985).

Unified enrollment of all the students for colleges and universities in accordance with state plans and guaranteed job assignment for all graduates by the state are being replaced by three methods: (a) Enrollment according to state plans. Graduates under this category will be, like those before, assigned jobs in line with state plans. (b) Enrollment by commission from work-units that need college graduates. The unite concerned pay a certain amount of training fees as prescribed in the contracts they sign with schools. Graduates are assigned to work in these units in accordance with the contracts. Since 1983, the enrollment in this category has been doubling annually. (Dong-chang He, 1985). It has been being made as an important supplement to the state enrollment plan. And (c) Enrollment of a small number of self-support students outside the state plan. These students pay their own expenses. After graduation, they may find jobs by themselves or be employed through their schools' recommendations. According to Wang Zhi-chang, director of the Student Affairs Department of the State Education Commission, by 1993, over 70% of China's university students will have to pay their own fees and find their own jobs after graduation (Times Higher Education Supplement, February 12, 1988).

In contrast with those in the past, the current reform gives prominence to changes in the administration system of higher education. In view of the understanding that " shortcomings in the management system and drawbacks of the various rules and regulations restricted people's socialist initiations " (Liu ke, 1985) and "the realization of educational innovations, and indeed the whole modernization process in China rests on the revitalization of an ineffective and inert bureaucracy " (Julia Kwong, 1987), the current reform tries to eliminate the " iron rice bowl system " which guarantees lifetime job security. In China, distributional equalitarianism has been practiced for years; and it makes no difference whether one works more or less, whether one's work is good or bad, or whether one works or does not work since there is no clear job description and no evaluation. Consequently, the morale of teachers and staff are stifled. To change this situation, efforts have been made to formulate work norms and job responsibility system, and the principle of distribution according to work has been instituted step by step. Institutions of higher education have been setting for their employees titles, positions, work norms and responsibility systems for different levels. A clearly defined job description gives expression to the title. And to a certain extent work norms and job responsibility system reflect the results of one's work, namely, the quantity and quality of work one provides for the society. Parallel to this, a constant and strict evaluation system has been instituted, under which everyone's work is measured and supervised (Liu Ke, 1986). According to different posts and titles , different standards of post allowance are worked out, under which, no allowance is given to those who fail to fulfil their duties, and punishment is meted out to those who seriously neglect their duties.

In order to increase the ability of institutions of higher education to serve the needs of economic and social development, the central authorities have decided to grant colleges and universities more decision-making power. At the level of individual college and university, the system whereby the president assumes full responsibility has been instituted. The power has been granted to individual institutions to enroll students beyond the quota set by the state plan by signing contracts with other governmental agencies, enterprises, and collective units. Presidents and vice-presidents of schools have exclusive power to select and to appoint their subordinate staff members, to determine the administrative structure of the school, to recruit teaching staff and other employees and to remove incompetent personnel from their posts. Greater autonomy has been granted to the institutions to allocate their own financial resources and to allocate capital investment, subject to the limit set by the approved overall plan; and greater say has been given to the institutions to assign jobs to their graduates (Shiqi Huang, 1985).

At the level of department, the new responsibility system allows department heads to make decisions concerning both personnel and financial matters within the department.

(4) Speculations and Prospects

China has a centralized academic system, and in any highly centralized systems, as Dr. Altbach points out "the national government has a key role in determining the nature of reforms and in determining the means for their implementation " (1980).

The recent campaign for higher education reform took place when the reform in the economic system had been launched vigorously. Therefore, it is obvious that the reform in higher education is not only a requirement but also a service to the reform in the economic system. On the final analysis, the major objective of higher education reform is to enhance higher education's economic contributions. In contrast with those in the past, the current reform in China emphasizes first and foremost the changing of the higher education structure to make the training system more responsive to economic needs. Since decisions were made by the highest authority in the country, the adopted program of reform can be expected to produce effects pretty soon.

In China, admissions used to be planned by the central ministries on the basis of projected manpower requirements. Upon graduation, graduates used to be obliged to work at the jobs to which they had been assigned. Unfortunately, manpower planning system, as mentioned previously, would fail to reflect the actual demands of economic and social development, especially when there are rapid advance in science and technology. Thus, enormous wastage of talent would result. Attempts have been made to maintain manpower planning system as a component of the planed economy and to provide extra-plan training of talented people (by contracts between the institutions of higher education and governmental organs or those who need college graduates) as the necessary complement to manpower planning.

Controlled experimental studies have been conducted in recent years, and the proposed innovative measures put forward in the program of reform have, for the most part, been tested at selected schools. For instance, Shanghai Jiaotong University was conducting reform in administration system for as long as 5 years (from 1979 to 1984) (Rosen, 1986) and a part of its experience has been reflected in the program of reform.

In China, it seems that the change in administration system has been put in the centre, and the elimination of the conventional " iron rice bowl system " has been regarded as a breach, since with the defect of the administrative system, the whole higher educational undertaking lacked vigor to suit the practical needs of modernization and construction of its own initiative. Without an effective and efficient administration system, the goal of the modernization program cannot be attained nor its policies implemented (Julia Kwong, 1987). One leading member of Shanghai Jiaotong University emphasized that administration reform was the most fundamental of all reforms when he said : " We have always engaged in educational reform; ...These reform efforts have not resolved the fundamental problems in institutions of higher learning because they were not designed to correct these deficiencies. How can the quality of education and the level of scientific research be improved and how can socialist universities with exemplary performance and characteristics be formed if institutions of higher learning are not given more autonomy, if there are always more hands than needed, and if the practise of eating out of one big pot is not rectified? " (Guangming Ribao Interview November 14, in JPRS February 11, 1985). This emphasis on raising organizational effectiveness was shaped largely by western influences after the opening of China. Through the introduction of advanced management science, and exchanges of scholarship with other countries, especially with the developed ones, an unanimous conclusion has been drawn among the administrators and staff members of higher education that a basic important element in vitalizing colleges and universities is to adopt the Western style of university management which lacks relative job security (Julia Kwong, 1987).

The other side of the change in the administration system is the efforts to expand autonomy of institutions of higher education, and to relax, step by step, much of the centralized management. One can easily understand that the intention of restructuring Chinese higher education is to improve its effectiveness and efficiency by heightening the morale of staff members and administrators and by mobilizing the enthusiasm of individual institutions. Only on this basis, can the function to serve modernization and economic development of the country be performed to the fullest.

In China, the change in administration system with elimination of the conventional " iron rice bowl system " as its focus is " not completely compatible with the socialist system where the state guarantees social and job security for all". It contradicts some of the basic values in China's political and civil society " (Julia Kwong, 1987), therefore, the reform is facing the dilemma of resolving this contradiction. It is obvious that the practice of "eating from the same big pot " is so widespread and so deeply rooted in the Chinese society that it can not be eliminated in a short time. Such practice reflects remnants of an equalitarian ideology of the old China's small peasant and natural economy, and it is extremely difficult to educate people to break with force of habit. This is why in the process of reform obstacles and resistance to forward movement often rise.

It might be reasonable to say that the proposed restructuring is sensible and well-intentioned. It might also be fair to say that the proposed restructuring of higher education is meticulous in design, though the actual implementation may not be so easy, and can in fact take a long time and suffer setbacks.

Higher education does not, by any means, find itself in isolation in the society, but is restricted by historical, political, economic, and cultural conditions. In the final analysis, the sources of the problems with Chinese higher education lie with the political and economic system. These problems could not be solved thoroughly through the reform of higher education itself.

Zajda once gave a reasonable prediction on the reforms in the Soviet higher education when he pointed out: " Whether Soviet higher education is likely to undergo any really fundamental and socially significant change of content (ideals and aspirations) or achieve a new direction in the future will depend on the nature and structure of the politico-administrative leadership. Because of bureaucracy in the Central Committee and the Poliburo, official and significant policy planning and evaluation continue to be directed from the top of a pyramidal politeco-educational and administrative hierarchy." What he says is absolutely true for the reform in China.

In recent years, the reforms in political and economic systems have been underway in China. It is not out of place, therefore, to predict that success or failure of the reform in higher education will depend, to a great extent, upon the result of the reforms in political and economic systems.

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ISSUES AND TRENDS OF THE SPECIALIZATION STRUCTURE IN HIGHER EDUCATION IN CHINA

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The structures of higher education include the structure of levels, the specialization structure, the structure of types and administrative structure. The composition and proportion among them symbolize the various relationships between the kinds of structures of science, culture and economy, such as those of production, technology and employment. If some attention were paid to the structures of higher education some general laws of higher education could be discovered. If we follow these general laws, higher education will have a balanced structure, which is very important to the development of a nation's social economy as well as to the development of higher education itself.

The specialization structure in higher education is a horizontal structure of higher institutes training specialists. It embraces the proportion of each of the specialization categories, the relationships between these categories, and the structures of social economy, science and technology, production and employment. The horizontal structure of the specialization categories designates the various specialists to be trained by higher institutes and the development of the specialization structure itself. Specialization is a crucial element in higher education. The proportion among each of the specialization categories has a direct impact on the proportion of the other structures in higher education. Therefore, experts regard specialization as the basic unit or the heart of higher education(1). Of all the factors of higher education, the specialization structure is the most important one for three reasons. First, it is the reflection of a nation's current economic structure. Secondly, it is connected with the development of the industrial structure. Thirdly, it reflects, directly or indirectly, the needs of social economic development and its characteristics. Accordingly, a different social economy may or may not be suitable for rational or irrational structures of education. A rational or irrational structure of education will exercise tremendous influence on the development of national economy, science, technology and culture.

1. A Historical View on the Specialization Structure in Higher Education

Higher education in the ancient China regarded the humanities as superior to science and technology. There was a tradition in China that the governors always hired their officials by judging their literary talent only, and regarding science and technology as "odd skills". Before 1949, the specialization structure of higher education indiscriminately imitated the American and European models. Universities and institutes were divided into schools which were further divided into departments. There were no specialties in the department, only "Liberal Education" was offered in those institutes. Students were asked to have a good grasp of basic knowledge. At present, the basic pattern of specialties in China was formed on the Soviet model. In 1952, most of the departments of institutes were reorganized according to the national economic policy that gave the priority to the development of heavy industry, to the requirements of national economic development in a planned and proportionate way, and to fit the job assignment system of the graduates. Minister of Higher Education Ma Xulun, in his 1953 address on the policy and task of higher education, stated that "educational construction should be designed to complement production;" "the focal point of economic construction lies in industrial construction;" and "the focal point of industrial construction lies in heavy industries."(2) After this drastic adjustment, the specialties, departments and institutes were changed from "Liberal Education" to "Specialized Education"; more attention was paid to the education of specialists of industrial construction and teachers. The entire specialization structure of higher education was changed. The number of comprehensive universities decreased, while the number of institutes of engineering and teachers' universities/colleges increased sharply, and the institutes which had only one specialty took a dominant position. Thus a basic pattern of specialization structure of engineering institutes was formed. After the "Great Leap Forward" in 1958, some new specialties derived from modern science and technology were set up in accordance with the national social construction and the development of science and technology. For example: atomic specialty, semi-conductor specialty, and electronic specialty. The structure of higher education improved to some extent. It was also very important that we were able to train senior specialists in our own institutes. This not only expanded the expert pool of our country, but also shortened our distance to the world's advanced level of science and technology. Since the specialization establishment did not have an overall planning, some existing specializations were further divided and the focus of specialization became much narrower. For instance, metallurgy was divided into five smaller categories: rare metal metallurgy, precision alloy, high-temperature alloy, powder metallurgy and metal corrosion and its resistance. During the adjustment, some students were transferred from old majors to the new ones, and the result was that the students could not grasp basic knowledge and use it in their practice. It was a waste of time, manpower and materials. These problems were rectified after the execution of the "Eight Character Policy": tiaozheng (adjustment), gaige (reformation), gonggu (consolidation), and fazhan (development). Some "leftist" wrong-doings which were against the developmental rules of education itself were redressed. In line with this adjustment, student enrollment in short-cycle specialized institutes (zhuanke) decreased drastically. This gave rise to an unbalance between short-cycle specialized institutes and regular undergraduate institutes (benke). This was a lesson we should remember.

During the "ten year internal turmoil"--the Cultural Revolution, the entire educational system was disrupted. For the first four years, higher institutes ceased to admit any students. For the following six years, students were selected from experienced workers, peasants and soldiers or re-educated youth, they were called "gongnongbing xueyuan" (worker-peasant-soldier students), and most of them were enrolled in technical or engineering institutes attached to different ministries. Those institutes constantly modified their specializations in accordance with production needs; some of them even organized teaching in light of typical products". As a result, the structure of higher education stagnated or evolved abnormally.

After the downfall of the "Gang of Four" in 1976, especially after the Third Plenary Session of the Eleventh Committee of the Communist Party of China, higher institutes set to right things which had been thrown into disorder, reviewed the experiences from the establishment of specializations, and made a first adjustment in line with the policy that the students' basic knowledge should be expanded, their scope of specialization should be broadened, and their adaptability should be strengthened.

Generally speaking, reforms and adjustments in the specialization structure in higher institutes continued according to the needs of national economic development in various times periods. The reforms and adjustments in specialization structure in from 1953 to 1983 are summarized in Table 1.

As far as the number and the category of specialization were concerned, graduates trained by the institutes met the needs of the construction of national economy and culture before the eve of "cultural revolution". For example, the specialties in engineering

Table 1. Number of Specialties Established by Field of Study (1953---1983)

	1953	1955	1957	1958	1962	1965	1978	1980	1982	1983
Engineering	107	137	183	194	295	310	396	537	366	389
Agriculture	16	18	18	40	48	37	49	60	46	50
Forestry	5	4	9		16	13	16	22	16	16
Medicine	4	5	7	8	11	11	47	20	22	24
Teachers Training	21	15	21	25	40	30	41	40	40	43
Humanities	19	25	26	17	60	72	35	66	54	59
Natural Science	16	15	21	37	79	55	126	158	139	146
Business	13	14	12	9	25	21	44	54	37	43
Politics & Law	2	2	2	2	3	1	3	8	7	10
Physical Culture	1	2	2	6	9	6	7	8	9	12
Arts	11	13	22	25	41	40	55	63	58	63
Total	215	249	323	363	627	596	819	1036	794	855

Source: *Achievement of Education in China* People's Education Press, 1984. P. 53

fit to the 156 key items of construction in "the First Five Years Plan". Graduates from 1954 to 1957 were universally recognized as very qualified (3). In fact, according to the (Soviet Union's) requirements of training a readiness expert, students should go through the whole process of the specialists' training. Upon graduation they should be competent at job without the need to take short-term trainings or the time to get accustomed to their job. All of these factors fit to the situation of China at that time. Graduates from higher institutes played an active role in China's economic construction. But this adjustment gave rise to some problems for further development of China's higher education too, including:

a) Three kinds of institutes were established based on the Soviet model which treated science, engineering and agricultural majors as separate and unrelated subjects. Teaching in basic sciences, research in engineering and agricultural institutes were weakened. The separation of majors was both a disadvantage to raising the level of science and technology and an obstacle for students to grasp basic knowledge.

b) Some curricula (or specialties) were designed too narrowly, especially those in engineering, most of which were defined by products or technological processes. The result was that the engineering specialists had a narrow range of knowledge. They had little adaptability when making frequent shifts to related fields.

c) Russian was the only foreign language taught in the institutes after the adjustment. English and other foreign language courses were cancelled. This practice created an obstacle to learning the achievements of science and culture from Western countries.

d) Some teaching methods that needed reform were copied mechanically and applied indiscriminately from the Soviet Union. For instance, under the teaching plan, teaching hours and loads were too heavy for both teachers and students. Indoctrination was the main teaching method by which the teachers usually lectured from the beginning to the end. Students' enthusiasm in learning was ignored. The whole teaching was organized with an emphasis on collectiveness. Students' individualities were also neglected.

e) After the adjustment, the characteristics and heritages of some well-known were not retained. Some high level institutes or specialties were segmented and faculties were scattered. As a result, they had lost their superiority(4).

Generally speaking, China's higher education after the adjustment retained its pattern until 1978, though the end of the 1950's and the beginning of the 196's saw some adjustment which made the scope of specialties narrower and narrower. Many problems remained unsolved.

2. Main Issues of the Specialization Structure of Higher Education

At present, China's specialization structure in higher education treats natural sciences and engineering as the dominant component. Designed during "the First Five Year Plan" period, it is very unfit for the national economic system and the needs of the new scientific and technological revolution today. Its main problems are:

a) The between-specialty proportion is out of balance. First of all, the two major departments of Humanities and Sciences enroll disproportionate percentages of students.

Table 2 demonstrates the number of students graduated from the majors of natural sciences and humanities. In 1982, there were 276,200 science graduates who made up 57 percent of the total graduates, whereas there are only 41,000 humanities graduates who constituted 9 percent of the total. In light of this, the first thing we should do is to adjust the structure of higher education, to increase the proportion of specialties in humanities, and to set up an appropriate proportion between sciences and humanities.

Table 2. Number & Percentage of Students
by Field of Study 1982 (unit: ten thousand)

	Engi	Agri	Fore	Med	TT	Hum	Scie	Busi	P&L	PhC	Arts
No.of stud.	17.19	3.25	0.55	2.6	12.87	2.7	4.03	1.29	0.114	0.565	0.31
% of total	37.8	7.2	1.2	5.7	28.3	5.9	8.8	2.8	0.3	1.3	0.7

Source: On Higher Education Qi Lu Heilongjiang Education press, 1986. P. 81

Secondly, the within-specialty proportion in humanities and sciences, respectively, is badly in need of adjustment. For example, according to a survey in 1982, there were more than 388,400 students majoring in engineering, who made up 34.3 percent of the total enrollments. Since China is largely an agricultural country, she needs many specialists and technicians in agriculture. But her agricultural education is found in an extremely insignificant corner in the system. This situation can not be conducive to the development of modern agriculture and agricultural modernization at all. Even in engineering major, the specialty structure is very unbalanced. There are far more specialties of heavy industry than those of light industry. Students majoring in mechanics made up 29.2 percent of the total as Table 3 indicates.

Obviously, students majoring in industry, textile and food production were far fewer than those of other specialties. The result was that their graduates could hardly satisfy the need of national reconstruction.

Thirdly, the within-specialty proportion in humanities also needs adjustment. From Table 2 above, we

Table 3. Number of Students in Fields of Engineering
(unit: ten thousand)

	Mechanical	Radio-electronics	Architecture	Chemical	Geology	Food Production	Light Industry
No. of students	11.3516	7.946	4.7623	2.943	1.7748	0.4956	1.2697
%	29.2	20.4	12.2	7.5	4.6	1.3	3.3

Source: Achievement of Education in China People's Education Press, 1984. P. 64, 66.

can see that there were 100,059 students majoring in social sciences, finance and economics, and politics and law. They made up 11 percent of the total number of students. However, there were only 13,685 students among them who majored in law. Investigation has revealed that business graduates only met 13 percent of the total needs, while students graduating from law met only 9 percent.

3) Specialization Structure is Excessively Unitary

At present, there are too many mono-specialty colleges in China. For instance, institutes of engineering, institutes of agriculture, teacher training colleges, business schools, law schools, physical culture schools and art colleges. They are established separately. As a result, humanities are disconnected from sciences, sciences are separated from engineering and agriculture. Even engineering colleges are subdivided into many smaller branches of specialization such as colleges of railway engineering, coal mine engineering, textile, aviation, ocean shipping, chemistry, petroleum and metallurgy. The within-specialty structures of science and medicine are almost the same as that of engineering. All colleges, even the different specialties within one college, are separated from one another. The worst thing is that the territory of specialties in China became narrower and narrower from 1952 to 1977. Students could not obtain a wide range of knowledge. For example, students majoring in business did not study mathematics; and those majoring in engineering did not take any courses in business or social sciences. The reasons were: since a specialty's load was too heavy, students did not have any time for study in other fields; teachers in a department or college could not give courses outside their fields. The majority of administrators and experts realized that a student's main task was to become a specialist. It was therefore not worthwhile for them to spend time studying other courses which did not directly relate to their fields(5). Because of this, students lacked creative thinking abilities and were not good at solving practical problems that might occur in their work. They could not meet the requirement of integrative modern science and technology and grand social production. Generally speaking, this situation was a disadvantage to the development of science and technology. The scope of the specialties was so narrow that it was hard for the government to assign an appropriate job to a graduate. On the other hand, the students could not easily switch to other jobs. To some extent, it was not efficient to the national development.

C) Division of elaborate specialty and narrow range of specialty

According to an investigation by the Ministry of Education of China, there were 215 different specialties belonging to the 11 categories of science, engineering, agriculture, forestry, medicine, teacher training, finance & economy, politics & law, humanities, physical education and arts in 1952. Three decades later, the specialties totaled 794; almost four times more than there had been in 1952. In the early 1950's, the number of specialties in engineering institutes was 107, but they increased to 295 in the early 1960's and 400 in the 1980's. The increase of the number of specialties meant that the scope of specialties has become smaller and smaller. Every specialty institute designed its specialties according to the needs of the profession or the production and technical processes, and offered different specialized core. The narrow range of specialties has generated a multitude of disadvantages. For instance, the specialty of ceramics in Nanjing Chemical Engineering Institute was subdivided into five smaller specialties: daily use pottery, ceramic crafts, radio-ceramic, technological-pottery and electrical pottery. It was found that, in Chendu Science and Technology University, there were 16 specialties belonging to organic and inorganic chemical engineering. Of them there were 11 specialties designed in accordance with the products, which made up 68 percent of the total specialties. In the South China Institute of Engineering, about 32.9 percent of the specialties were rather narrow. Obviously, this kind of specialization structure should be reformed and adjusted. More selective courses should be offered so that students will have a wider range of knowledge and their creative thinking abilities and adaptability will increase.

3. Some Opinions on the Adjustment of the Specialization Structure in Higher education.

One of the most important tasks of higher education reform is to set up a rational specialization structure. It is also a fundamental condition for the development of higher education. Setting up a rational structure in higher education is should be contingent upon the quantity of man-power the society needs and upon the output of higher institutes. In other words, higher education should reflect the needs of national economic development and the level of scientific and technological development.

First of all, the establishment of specialization should meet the needs of national construction. The current national construction policies are: to speed up the development of agriculture and light industry, to quicken the construction of energy, transportation and communication systems, and to adjust heavy industry's service direction. From the 1980's to the inception of the 21st century, the national economy and social development can be divided into two periods; the first period is to lay a solid economic foundation for further development, and the second is to vigorously develop national economy so that by the end of this century our GNP will increase three-fold. Therefore, when establishing specialization it is necessary to consider whether or not it will meet the needs of the present, of the 1990's and of the turn of the century.

Table 4 shows the various kinds of specialists in Shanghai according to the 1983 census. Table 5 indicates the need for specialists in Shanghai during the 1985---1990 period. Comparing the two tables we find a serious shortage in humanities' specialists in Shanghai from 1985 to 1990. If higher education is to meet the needs of

Table 4. Numbers of Specialists of Shanghai in 1983

(unit: thousand)

	Humanity	Teachers Training	Engineering	Medicine	Natural Science
Number	28.7	11.3	96.7	21.3	12.6

Source: On Higher Education Qi Lu, Heilongjiang Education press, 1986. P. 90.

Table 5. Number of Specialists Needed in Shanghai, 1985 -- 1990 (unit: thousand)

	Humanity	Teachers Training	Engineering	Medicine	Natural Science
Number	106.0	20.7	153.6	27.3	9.3

Source: On Higher Education Qi Lu, Heilongjiang Education Press, 1986. P. 91.

social development, the institutes (in Shanghai) should increase the enrollment and output in humanities.

Secondly, the establishment of specialties should complement the advancement in modern science and technology. Modern science and technology are developing in an extremely diverse and yet inter-connected manner, The diversity and inter-connectedness create many new subjects for study. Therefore, the development of education should precede the development of economy, and personnel training should precede the development of science and technology. It is necessary to pay attention to reforming the old specialties while establishing new ones. When establishing new specialties, it is very important to calculate and research new achievements of science and technology, especially those interdisciplinary and integrative subjects.

In recent years, with the execution of the open-door policy, we have gained some information and experience from higher education in Western Countries'. The studies on American higher education have especially inspired us. They are very important to our higher education reform today. Now many institutes, in accordance with the needs of national reconstruction and the development of science and technology, learn and absorb other countries' experiences. Linking those with their own situation, they are adjusting the specialization structures, broadening the range of knowledge in curriculum, and strengthening the teaching of basic theory. At the same time, some new specialties and new subjects are being set up. Some engineering institutes are trying to overcome the dilemma in which science and engineering are separated from each other. Some institutes have been offering to all students general courses in humanities, social sciences, business administration and computer science. What they have done not only changes their institutes' specialization structure but also exerts influence on the entire system of higher education. The separation of humanities, science and engineering has been weakened to some extent. But there is still much work to be done in the adjustment of the entire specialization structure in higher education.

Notes:

(1) Pan Maoyuan, Lectures on Higher Education, (Beijing: People's Education Press, 1984. P. 117.

(2) Shi Ming-hu and Eli Seifman, Toward A New World Outlook: A Documentary History of Education in the People's republic of China, 1949--1976, New York: AMS Press, Inc., 1976. P. 51.

(3) Zhou Qi, "On Experiences of Higher Education in the United States, the Soviet Union and Reform of Higher Education in China," Chinese Social Science (Beijing), Vol. 3, (1984).

(4) Ibid.

(5) Qi Lu, On Higher Education, Heilongjiang Education Press, 1986. P. 88.

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COMPULSORY NINE-YEAR EDUCATION IN CHINA: ISSUES AND PROSPECTS

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On May 27, 1985, the central government of China issued the "Resolution of the Central Committee of the Chinese Communist Party Regarding Reforms of the Educational System". This document exemplified educational reforms in China during the past decade.

One of the three major components of the document was to extend the six-year basic education to a mandatory nine-year education system. This, in effect, would introduce a universal nine-year basic education system similar to those in many industrialized countries. The Resolution called upon the 1/4 of the nation's developed regions to make lower secondary education universal before 1990, the 1/2 of the developing regions before 1995, while the remaining 1/4 before 2000. The other two components, concerning reforms in secondary as well as higher education, though equally important, will not be dealt with in this paper.

In planning for the follow-up actions, the Resolution decided to decentralize the responsibility over matters dealing with financing and quality of basic education, both are critical issues in China.

The Resolution was followed by the adoptation of a "Compulsory Education Act" by the People's Congress on April 18, 1986. This Act was not only the first Act concerning basic education in China but also the first education act.

A quick look at the Resolution leaves one with such questions as: On what ground and what basis was this policy made ? Has primary education already been sufficiently provided both quantitatively and qualitatively throughout the country so that it is imperative to expand to junior high school? Are the local communities in a position, economically, to finance the dramatic expansion of education? How will the Compulsory Education Act be reinforced?

First of all, there is no evidence that this Resolution was adopted before any sector or feasibility study was conducted. The intention was to eliminate some six million dropouts from primary and lower middle schools each year (People's Daily, Sept. 5, 1985), and to show the whole nation how the central government elected to tackle this problem. More often than not one finds that policies (not only educational) are made mysteriously at the top level with little lower level participation or feasability study. One good example is the decision to quadruple China's GNP per capita before the end of the century. This decision was made in 1978 by Deng Xiaoping on an occasion when he was meeting with foreign visitors. Once this decision was made, the Chinese officials and economists had to justify the likelihood for China to realize it. The Resolution about educational reforms was made by using similar strategy and technique.

The government policy of dramatically expanding access to junior high schools does not appear to pay enough attention to ensuring that primary school graduates achieve minimal standards and to reducing the variations in achievement levels. As a matter of fact, rural education in China has reached a crisis level and recent estimates suggest that primary school enrollments have declined. Official government statistics show that although the national enrollment rate is as high as over 95 percent, only 60 percent of the students complete the cycle, and only 30 percent of those who graduate are considered to have reached minimal standards. According to a report by the National Census Bureau published in the People's Daily (June,3, 1988), rural education in China is in an unaccountable state. The report said that in Hubei Province about 1.5 million primary school students dropped out of school in 1987 and the number of primary schools decreased about 10 percent in 1986. The same report, based on a study of 2,940 rural families in Guangdong Province, a more advanced province compared with Hubei since it is close to Hong Kong, found that among the children aged between 6 and 17, only 71 percent were enrolled in schools. Similar situations were found in Shanxi Province and Liaoning Province. In Shanxi from 1982 to 1986, there had been a decrease of 2,889 rural schools with 575,000 primary school dropouts. In Liaoning, Hebei, and Jiangxi Provinces, the study shows that about 30 to 50 percent school children dropped out.

The main causes of this are the inability of government to staff and equip the remote rural schools and the increased disenchantment of parents with the quality of the formal schools. They perceive the rural schools as of such poor quality that they can no longer justify the sacrifice of their child's labor for the improbable benefits to be derived from schooling. Many parents send their children to school in the hope that they will get into colleges and universities and eventually leave the farm upon graduation. But the chances are very slim in the rural areas where the teaching quality in primary and secondary schools is very poor. Very few students from peasant families pass the extremely competitive college exams. Their enrollment at universities is about two percent each year (400,000 intake for colleges divided by 20 million for each age cohort). Heavy farm work makes it even more difficult for rural students to concentrate on studies and their examination scores are far below those of the urban children. Parents, seeing that there is little hope for their children to get into higher education, often compel them to drop from schools.

The poor quality of rural schools and student academic performance is mainly attributed by the government to the large number of unqualified teachers. It is repeatedly reported in the official newspaper that at present about 50 percent of the rural primary school teachers and 78 percent of junior high school teachers are not qualified in the subject they are teaching (Table 1).

Table 1.
Educational Background of Primary and Secondary School Teachers in China

	Post-grad. 1	Univ. Grad. 2	Two-yr. college 3	Normal school 4	Less than upper midl. 5	Total 6	% Unqualif. 5/6
Pri.	0	0	0	3,043,136	2,381,427	5,424,563	43.9%
Junior High	0	120,445	337,092	1,481,992	206,260	2,145,789	78.7
Senior High	0	182,521	156,817	99,541	12,232	451,111	59.5
Agri. Sch.	0	9,841	20,060	36,953	6,625	73,479	86.6

Source: Education in the Year 2000 in China, Ministry of Education, Beijing, China, 1985.

The minimum requirements for primary and secondary school teachers are defined by the central government as follows:

1. Teachers of elementary schools should be graduates of senior high schools that offer pre-service teacher education.

2. Teachers of junior high schools should be graduates of two-year colleges that offer teacher education.

3. Teachers of senior high schools should be graduates from four-year teachers colleges and normal universities.

From the above table we can see that about 44 percent of the teachers at the primary level, 79 percent at the junior high level and 60 percent at senior high level have not reached the minimum requirements. These requirements, reasonably defined for China, have been used by the State Council to declare a national target for teacher qualification by 1995. By that year, the target is to have all the teachers meet these criteria. However, before that time the Chinese school system will continue to produce large number of unqualified students, some of whom are the potential sources of the country's 30 percent illiterates.

The lesson of the radical movement towards universal secondary education during the notorious Cultural Revolution should not be forgotten. At that time the government intended to popularize lower middle school education and then expand to upper middle school education at a time when primary education was still not generally universal. Large numbers of middle schools were set up, and secondary school enrollment expanded by 250 percent. This led to a serious shortage of qualified teachers. Lower secondary school graduates became secondary school teachers without any further training; primary school teachers were promoted; it was not uncommon to find that in the rural areas many primary school graduates were recruited as secondary school teachers. This resulted in what was called "two promotions for teachers and two demotions for students", since upper middle school leavers were only as good as primary school leavers.

In one recent trip to Qinghai, a remote province in the northwest of the country, the writer interviewed a school superintendent in one of the schools that was shown to the writer. The school was mainly a boarding school for the Tibetan children. The following is about the content of the conversation:

Q: (question) How many students and teachers do you have in this school?

A: (answer) We have about 500 students and 15 teachers and administrators all together.

Q: How many of your teachers have met the qualification required by the State?

A: None.

Q: What kind of in-service training plan do you have to upgrade these teachers?

A: We have no intention to upgrade our teachers in the near future.

Q: Why?

A: Because as soon as they are upgraded, they will "fly away". We have no incentives to keep them here. We have had enough experience in this. Before, some normal school graduates were assigned to work here but none stayed more then one semester before they started to request for transferring to better school districts. On the other hand, their attitude towards teaching was not as good as the less qualified teachers.

Q: Who is paying your teachers?

A: The communities and the parents of the students.

Q: How?

A: All our teachers are Minban (collectively paid) teachers. We receive about 30 Yuan from the government for each teacher every month and also each student is required to contribute one sheep a year. These sheep will be given to the teachers as a subsidy.

Q: Is the school well attended?

A: Not too well.

Q: What kind of measures do you have for children who do not come to school? Do you know the Compulsory Education Law?

A: I do not know about the Compulsory Education Law, but I do have a lot of pressures from the provincial department of education. Officials from the province once in a while, come and inspect attendance ratio and ask us to report regularly. Our penalty for those who do not come to school is a fine of an extra sheep a year.

The Education Commissioner from the province who was traveling with the writer added that some parents just paid the sheep for their children's absence, especially for girls.

China announced that, in 1987, about 1050 counties out of the total of about 2500 counties in the country have realized UPE. Such an assertion is really questionable. Even in Liaoning Province where the writer conducted the research project on student achievement based on a random sample of over 1600 primary school students from seven counties, the initial analysis shows that about 17 percent of the primary school population were overaged by at least more than two years. If the one-year-overaged were counted, the percentage is as high as over 40. This finding is in consistence with the World Bank's study in Gansu Province in 1985. That study found that 25 percent of the children in primary schools were overaged and 4 percent were underaged (World Bank, 1986).

This problem is further complicated by the unique definition of universal primary education by the Chinese government. UPE in China is officially defined as the achievement of four ratios, termed (1) enrollment ratio; (2) annual retention ratio; (3) graduation ratio; and (4) universalization ratio (Table 2).

Table 2.
Definition of Universal Primary Education

Name	Target for UPE	Definition
1. Enrollment ratio	95%	$\frac{\text{Number of 7-11 yr olds in school}}{\text{Total 7-11 population}}$
2. Annual retention ratio	95%	$\frac{\text{Enrol. at start of school year}}{\text{Enrol. at the end of school year}}$
3. Graduation ratio	85%	$\frac{\text{Number of students in last grade who pass the exams}}{\text{Number of students in the last grade}}$
4. Univers. ratio	80%	$\frac{\text{11-15 primary leavers + 12-15 yr olds in second. school + 12-15 yr olds with equivalent}}{\text{Number of 12-15 yr olds -number of 12-15 yr olds in pri. school}}$

Source: World Bank: Gansu Province Education Sector Report, 1986.

Ratio 1 is the familiar net enrollment ratio. Ratio 2 is a within-year retention rate, a reflection of the number of children who drop out during the school year. Ration 3 is a measure of the pass rate at the end of the primary cycle. Ratio 4, the most complex of the four, is essentially a measure of the proportion of 12 to 15 year-olds who have acquired the equivalent of a primary education. The denominator is the number of children of 12 to 15 years old who are not in primary school during the year under question. The numerator is the number of children in the age group who have completed primary school or its equivalent.

It is interesting to note that a ratio that is essential to assessing the holding power of schools, the proportion of children who progress from one grade to the next, is not included in these ratios. It is not unusual to find that when local schools are requested for statistics, they make it even simpler by using the ratio of the number of students at the beginning of the school year and the number of students at the end of the school year. In some school districts, the statistics reported to the upper level administration are quite inflated and not reliable.

To popularize junior high school education in China implies that the enrollment at junior high schools will be increased from the present 40 million to 60 million, a 50 percent increase. The national educational system will be hard pressed to meet the new quantitative demands. Specifically speaking, the country has to build new classrooms, train more teachers, supply more equipment, facilities and textbooks.

A 5-6 year primary education system only requires classrooms and some simple administration and storage areas. The addition of three more school years to establish an nine-year system of basic education implies inclusion in the curriculum of such subjects as physics, chemistry and biology, which even if taught jointly as "science" require some special facilities and equipment. Likewise the demand for new teachers as well as for qualified teachers will be tremendous. There are currently 2.1 million lower secondary school teachers, of whom about 78 percent are said to be not qualified. About 0.6 million teachers are currently being upgraded in some 280 in-service training educational institutes. Many of these courses are on spare time basis and last 3 to 5 years. If the annual output is 0.1 million, it will take at least 15 years before all the unqualified to be upgraded. It is projected that based on the 50 percent increase of enrollment at the lower secondary level, another million of new teachers will be needed for this dramatic expansion.

The government's Seventh-Five-Year Development Plan (1986 -- 1990) did not seem to pay enough attention to the need of the educational development plan. Education expenditure during the Seventh-Five-Year period will be increased by about 50 percent as compared with the Sixth-

Five-Year Plan, with an average increase of 10 percent each year. However, about 80 percent of this increase will be spent on the increase of teachers' salaries to keep pace with the high inflation rate of about 10 to 15 percent each year. Only less than one fourth of the increase will be used for non-personnel related expenses such as capital construction, curriculum development, equipment and library books procurement, all of which will also be highly inflated in the years to come. With less than 25 percent "soft" increase in the educational expenditure to meet the 50 percent "hard" quantitative increase in enrollment, it is hardly likely for any country to succeed. Furthermore, the country's existing funding formula for education is not only among the lowest in the world (Table 3) but also the most unevenly distributed. According to the statistics released by the State Education Commission, China's total educational expenditure as a share of total national expenditure is only 9.9 percent (SEdC, 1986). This percentage is obviously far below the average of 20 to 30 percent of educational expenditures in other countries (Windham 1986). The 10 percent increase in educational expenditure is perhaps still not enough to cope with the existing debt and problems as there are so many physically dangerous classrooms and school buildings, and poorly trained teachers in the Chinese primary and secondary schools.

Table 3.
Government Funding Formula
For Primary and Secondary Education
(Unit: yuan/pupil/academic year)

Expend.	Primary school	Junior high	Senior high
Administration	8.0	12.5	16.5
Equipment	3.5	6.5	10.5
Instruction materials	2.5	4.5	7.5
Maintenance	5.0	6.5	7.5
Other	1.0	2.0	3.0
Total	20.0	32.0	45.0

Source: Ministry of Education, People's Republic of China, Nov. 27, 1984.

This funding formula does not include personnel expenses. In 1986, China spent a total of about 18.5 billion Yuan on education among which 5.3 billion Yuan was spent on primary education, 5.2 billion Yuan on secondary education, and 3.6 billion Yuan on higher education. The expenditure for capital construction for higher education was 2.7 billion Yuan and 1.7 billion Yuan for primary and secondary education. In 1986 there were 130 million primary students, 49 million secondary school students and 1.88 million university students in China (People' Daily, Jan. 25, 1987). This clearly shows that the government overinvests in higher education at the expenses of primary and secondary education. While the government spent about 26 percent of the total education expenditure on higher education whose student population only consists of 1.1 percent of the total student population, it spent only 74 percent for over 98 percent of the students who are in primary and secondary schools. Thus the average expenses are about 40 Yuan (about $11) for a primary student, 100 Yuan ($ 27) for a middle school student and 2000 Yuan ($540) for a college student. Taking into consideration the fact that about 80 percent of the education expenditure is for teachers' salaries, the instruction related expenses averages only 8 Yuan per student at the primary level, 20 Yuan at the secondary level.

This is in consistence with what is found in Liaoning Province. Liaoning's GDP per capita takes the third place in the country. This indicates that it is a far more advanced province than the rest of the 26 provinces in the country. But education expenditure per middle school student is only 33 Yuan as compared with 38.5 Yuan according to the Ministry's formula and 9 Yuan per primary pupil as compared with 20 Yuan. In terms of classrooms, it is projected that the whole province needs at least 3.2 million square meters of new building to host the existing number of enrollment in primary and secondary schools (Wang Roufu, 1987). If the expansion of junior high schools is taken into consideration, the province needs at least a total of 4.4 million square meters of new buildings. It is estimated that from 1987 to the year 2000 a total of 2.6 billion Yuan will be needed by the province for capital construction with an average of 200 million Yuan each year. However, the maximum the government can invest is 430 million Yuan in the next thirteen years leaving the province with a deficit of 2.17 billion Yuan in order to popularize junior high school. The decentralization of the responsibility for financing basic education implies that it is the local community who should pay for basic education. If an advanced province like Liaoning is not able to adequately support the expansion of schools, in most provinces it would be even more difficult. In some cases schools shift the responsibility of financing education to parents who have children in schools. In Hubei Province, it was reported that in the rural areas an average of 38 Yuan was charged to primary students every semester, while government funding formula only requires 20 Yuan for a primary school student. On the other hand, since income for most peasants' families is still as low as 300 Yuan, 76 Yuan for one child's education is often beyond their ability to pay.

Three years have elapsed since then. From repeated news reports and the recent field study by the writer, almost no significant progress has ever been found in most parts of the country. In many rural and remote areas, the situation was no better than three years ago. The People's Daily (April 11, 1988) carried an article about the speech of Mr. Zhang Zigung, the director of the National Curriculum Development Institute. The speech, delivered at the National Political Consultative Conference, complained that the 1985 Resolution on Educational Reforms and the 1986 Compulsory Education Act turned out to be nothing but a lip service, because in the past several years almost nothing had been done in implementing them; there are neither incentive programs for those who do better nor penalties for those who violate them. No reinforcement measures have ever been taken in implementing the Education Act. There is at least over 50 percent of the population who either do not know this Act or simply intend not to know it. Also the government pays less attention to this education act than the economic or other crime related acts. As a matter of fact, primary and secondary education in many places is still in a state of laissez-faire. The same newspaper (People's Daily, May 16, 1988) reported that on April 11, 1988, in Mianjin Middle School, Vanan County of Jiangxi Province, a student dorm collapsed killing 9 students and injuring four. Such cases have occurred at least 14 times within a year in the country. From January 1987 to April 1988, about 14 similar cases have happened which claimed a total of 64 students' lives and over 168 injuries. Under such circumstances the vice Minister of Education once again emphasized the policy of "one have-no, and two haves" which is interpreted as every school should have no dangerous classrooms and every child should have his or her own desk and chair. But once again, policy is policy and reality is reality, but where can the local communities get the capital they need to improve the school facilities? This policy has been there for over decades and it will take decades before it becomes into reality.

This analysis shows that the policy regarding the educational reforms and the Education Act remains weak in providing specific assistance in the two major issues which critical for further development of education. Thus the quandary faced by the country for at least the remainder of this century is to make choice between new levels of sources of funding or an inherent acceptance of poor quality of instruction. At the present it does not seem likely that there will be any solutions for new levels of education investment in the near future since other sectors are competing for more capital as well. The picture for the education in the future is neither too optimistic nor pessimistic. A status quo will be lasting for a long time in China and perhaps till the first quarter of the next century.

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POLICIES AND REALITIES:

WHY HIGH SCHOOL TEACHERS DO NOT WANT TO TEACH?

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On January 1, 1985, a proposal was put forward by the former Premier Zhao Ziyang to the People's Congress, suggesting that September 10 be set as "Teachers' Day". The Premier said in the proposal that the purposes of having a Teachers' Day are to further raise the political and social status of teachers, to make teaching one of the most respected and admired professions, and to make the whole society respect education, respect knowledge and intellectuals (1).

The Ninth Meeting of the Sixth People's Congress passed the resolution to accept the State Council's proposal. It announced on January 21 that September 1 is Teachers' Day in the country.

This event came along with the effort of the Chinese to modernize the country in all fronts. The ambitious scheme of Four-Modernization needs not only advanced science and technology, but also vast numbers of well-trained labor force and special personnels in all fields, none of which can be achieved without a highly qualified, stable and loyal teaching force. To have a Teachers' Day is one way for the central government to show its determination to improve teachers' status.

This determination is also shown in many documents from various levels of government, dealing with teachers' promotion, welfare and training. In the letter to all teachers on the first Teachers' Day, President Li Xiannian said: "...Your work is an invention of both science and art. Education is directly related to the growth and upbringing of our new generation, to our nation's destiny and our country's future." "Respecting teachers and emphasizing education is an important symbol of a nation's level of civilization. Teaching should be one of the most respected and one of the most admired professions in our society (2)."

The policies can not be clearer. The questions to be asked are: What are the realities with teachers? What do teachers think about their work and life? How have these high-sounding policies been implemented? How do teachers talk about these issues? This paper will try to provide some answers to the above questions.

I. THE STUDY

This is a field research conducted in the summer of 1987 in Beijing, China. Selected subjects were three secondary schools of different types: a "key" school*---the Middle School Affiliated to Beijing Teachers College, an ordinary middle school--- Garden Village School, and a vocational school---School of Grain Storage and Processing. All three schools are located in Haidian District of Beijing Municipality.

It is a qualitative research, utilizing semi-open-ended questions to interview the principals and all the foreign language teachers in these schools. Interview questions with the teachers concern with their academic background, their training as foreign language teachers, their teaching experiences, their economic welfare, their views of their own social status, their working conditions as well as their power as a profession. Also Interviewed were officials in charge of foreign language education in the Beijing Bureau of Education, Beijing Bureau of Higher Education and the State Education Commission. Altogether, 41 people were interviewed, amongst whom were 34 teachers, 4 principals, and 3 government officials.

II. TO TEACH OR NOT TO TEACH---GENERAL IMPRESSION OF TEACHER MORALES

Teachers' attitudes towards their profession vary among the samples interviewed. Some have neutral feelings towards what they are doing, a few show positive attitudes towards their job, and the majority exhibit negative feelings about being a teacher in middle schools.

"To teach or not to teach" is not a question for about one-fourth of the teachers interviewed. Ms. Wang Guohung from the Garden Village School said:

> "I think teacher's job suits me, and I am planning to continue in the profession. Teaching is quite an OK job for a girl... Teachers enjoy two vocations. When I get married and have kids, I'll have more time and freedom to take care of the family."

Ms. Feng, a "middle-aged" teacher, viewed the positive side of teaching as "flexible in terms of work hours; it allows time to take care of the family and children". Ms. Mao, who graduated from college only a year ago, found that "teaching in the middle school is not as terrible a job as it is said to be. We don't earn much money of course, but I feel high spiritually." She continues:

> "Being a middle school teacher suits me better than being a tourist guide in the travel agency. Besides, I don't need to sit in an office 8 hours a day. Every week I can spare two days for self-improvement, which is not possible in other fields. We are not well-paid, but I can do some "moonlighting" and make up part of the difference. We enjoy the two-month vacation each year, which allows us more freedom.
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> "People need to be respected. As a teacher, I get respects from my students, which is a great satisfaction in my life. In some other bigger work unit, my welfare might be better but I could be ignored and unhappy. Also, my parents do not want me to leave the intellectual environment. They would not put up with me if I work as a hotel waitress."

A few other teachers shared similar ideas. The advantage of teaching, as they pointed out, was the flexible working hours, which allow them to take care of the family and kids. Only one teacher expressed her feeling of "love for kids" as the reason for her to stay in the profession.

Nearly one-third of the teachers interviewed expressed their neutral feelings towards their own profession. Teaching is not their best liked job, neither is it their most hated one. To them, teaching in middle schools is just like doing many other things, which involves both advantages and disadvantages.

Mr. Li Yaofang's responses were that teaching was not the job he liked best, but it was what he was trained for. "What else can I do?" he asked. "Translation needs other skills that a teacher may not possess. I know there are no other jobs for Russian speakers in our country now except for teaching." Ms. Qiao who was going to retire in two years was also a teacher of Russian and had similar feelings. "I know the hardships of middle school teachers. But at my age and with my training, there is nowhere else I can go. I have been in the field for most of my life and I just want to stay in it for another couple of years until I retire."

Several people felt that since they were already here, they should just stick to it. Ms. Yin's opinion was that the disadvantage of teaching is its low pay. But other jobs have other problems that teaching does not have. Ms. Zhu, a young teacher, had a sort of wishy-washy feeling towards her own job. "It's OK to be a middle school teacher. I don't dislike it, but I don't want to be tied here for the rest of my life either." Ms. Wang, who had been teaching for 15 years, said that she came to teach not of her own will: "I became a teacher because I had no other choice. Now I want to stay for the stable pace of life and for the convenience in taking care of my children."

A few other teachers show a neutral feeling towards their profession because of their advanced age and their low language proficiency. Senior teachers of 45 - 50 years old and young teachers who do not have a 2-year or 4-year college diploma were afraid that other places might not want to hire them. Ms. Feng and Ms. Xian said frankly that they wanted to stay because of their age. Ms. Wang Lihua was not thinking of leaving because, with her high school diploma and poor language skills, she could not find anything better.

There are other reasons for the neutral feelings towards school teaching. Ms. Zhang Lianrong felt that she had the obligation to stay in teaching. "I am a Party (Communist) member. I can not pull out of school just like that," she said. "In addition, the disadvantages of being a school teacher do not bother me that much. I have enough living space so I don't care if the school can provide housing or not. I am not well paid. But my husband is in the army and he earns more than 300 *yuan* a month, almost three times my salary. So our income is quite adequate for our one-child family." Another teacher, Mr. Chen Liuhai, felt that it was quite OK to teach in the school because the environment of this school was much better than that of the school in which he taught before.

More than half the interviewees expressed their outright negative attitudes towards school teaching. They would do whatever they could to escape from the teaching profession. Ms. Wang Renfeng expressed her feelings this way:

> "I saw the hardships of being a teacher when I was a high school student. Now it is my turn to suffer. I was assigned to work here and I have no way out. I have been here more than ten years, trying to like the job all this time; and I am still thinking of changing it. I have even thought of leaving Beijing and going to other provinces in order to jump out of educational field!"

School teaching is not the interest of these teachers. Mr. Li Liqiang said that he was still there because the school strictly forbid teachers to leave. He has no interest in teaching at all but he can not get out. Ms. Huang Jimei expressed her attitudes as the following:

> "I have no interest in being a teacher. I am not the right sort of person for the job. I come to school everyday, caring about nothing. I don't want to work

> hard. Nobody wants to come to teach in middle schools. I have fallen in the trap now, and I'll never be able to get out!"

She continued:

> "I will not allow my children to attend teachers college even if that's the only higher education they can get. Many of my colleagues try desperately to prevent their children from going to teachers colleges or normal schools. They have had too many painful experiences themselves. I am trapped here and I feel my whole life has been ruined."

Ms. Hu Wenluan, who is the head of Foreign Language Department in the "key school", told me:

> "My daughter graduated from the teachers college, but she didn't go into teaching. Instead, she got a job in the Service Bureau of the Municipal government. She is very happy and so is our whole family. I, as a mother, am also very happy. She is now doing a much easier job, having much more free time to read and do other things. She can easily change her job or go abroad to study, both of which are impossible for ordinary middle school teachers. She gets 200 yuan a month as bonus alone, which is twice a school teacher's monthly salary. How can you expect her to like being a middle school teacher?"

What is most worrisome the fact that those who strongly feel that they would rather do anything else but teaching are the best teaching force in the schools. They are mostly of 25 -40 years of age, most of them have a college diploma, and most of them are very proficient in the languages they are teaching.

To sum up, the overall morale of foreign language teachers in the middle schools is low. The majority of them do not like their job. Those who do are either too old to change their career or not qualified to work elsewhere. Those who genuinely like teaching are very few in number.

III. BEHIND THE LOW MORALE

What are the forces and factors that have caused foreign language teachers' low morale? The study shows that at least four aspects of teacher life have major influence on their attitudes towards their profession. They feel that they are overworked, underpaid, have no academic advancement opportunity and enjoy low social status.

78

(1) Working Conditions

Most teachers complain that the burden placed on them is too heavy. One of the teachers expressed her frustrations this way:

> "I have too many hours to teach and have no time and energy for anything else. I teach 2-3 classes, 5 hours a week for each class. I have to correct homework, prepare for lessons, write up exercises, and attend to many school chores. Teaching foreign language is a heavy labor both mentally and physically. After three hours of standing in front of the blackboard and shouting to groups of 50 students, I can hardly speak."

Ms. Ma Yueqin said:

> "I used to teach four classes and at the same time working as a master teacher** for one class. The biggest class I taught had 74 students. How do you practice English with 74 beginners all at the same time?"

A teacher of both English and Russian, Ms. Lu Qiuping, presented a rough time table of her daily life:

> "I go into the classroom at 7:30, to help students with their morning reading. At 8:00 I begin my first teaching session or prepare for the second session. 10:00 am is the time for students to go to the sportsground to do physical exercises, and all teachers have to go and supervise the students. After that, I either prepare my lessons or correct students' homework. In the afternoon, sometimes I teach; other times I go to the students' class meetings (this is the duty of a master teacher), teachers' political study meetings (once a week mandatory). I may also go to the classroom to supervise students' self-study sessions or tutor individual students. During the day, I never have a chunk of time for myself. After work, I have to tutor my own children at home. As a wife and mother, I have to wash, to cook for the family. I rarely go out on Sundays. I save this one-day weekend to clean my room. I can hardly find time to read newspapers!"

Teachers in lower status schools feel more acutely the poor working conditions. Ms. Xiao from the ordinary school complained that:

> "Middle schools are divided into several ranks. It is easier to teach in the elite 'key' schools as the students have the motivation and a good habit of learning, and they are in the right academic atmosphere. But in ordinary schools like ours, most of

> the students are from working class families and most of them don't have a motivation to learn, not to speak of the good learning habits. Teachers must work much harder to keep the ball rolling. In these schools, you put in twice the effort but still see no reward. How can you enjoy the work?"

Ms. Hu, the Foreign Language Department Head, admitted that "we drive the teachers too hard in middle schools. Many teach 3 classes plus the duty of a master teacher for a class. Each week, there is an afternoon for political study, one for political organization activity, and one for student class meeting. As a master teacher, you will never have a quiet mind, from dealing with the daily problems of 50 kids. The teachers are simply burned out!"

The financial scarcity of the schools makes the already poor working conditions even worse. Ms. Hu pointed out that the government spends too little money on education. "Our whole department receives no more than 200 _yuan_ a year for our daily uses, averaging 13 - 15 _yuan_ per head. The money is only adequate for a few Chinese journals. Whatever else you want to do, financially, you are on your own."

Teaching materials and equipment are far from ideal. Dictionaries, typewriters and tape-recorders are always in short supply for teachers. Many teachers have to spare some of their already meager salary to buy reference books for teaching. Because of the shortage of teaching and reference materials, teachers have to add to their already heavy working load the preparation of exercises and examinations by themselves. Because of the lack of modern language teaching equipment, teachers have to double their efforts in the training of students' pronunciation, intonation and listening comprehension skills.

(2) Economic Welfare

It is universally admitted in China that middle school teachers are underpaid. Here are some of the comments teachers made concerning their income and other welfare:

> "I am considered the lucky dog among teachers of my age, getting 76 _yuan_ a month. Many of my friends have also been teaching for 15 years and still earn 70 _yuan_ a month plus 5 - 10 _yuan_ symbolic bonus. No welfare, no housing, not even kindergarten for our children. Putting everything together, I get about 100 _yuan_ a month. If I could change my job, I could easily get 200 or 300 _yuan_. In this situation, who wants to stay in school and teach?" (Huang Jimei)

"I joined the teaching profession in 1957, 30 years ago. Now my basic salary is only 105 yuan. My classmates who work in other fields earn at least 2 to 3 scales*** higher than I do, they earn 130 to 150 yuan. We majored in the same subjects, and we graduated at the same time. Why should the treatment be so different?" (Ms. Xiao)

"I have a classmate who is now working in a hotel. She has a much easier job. At the end of last year, she got 500 yuan just for bonus. I make 60 yuan a month as my salary." (Ruan Yubing)

"School teachers lead a miserable life, at the lowest end of the ladder in the society. Since the economic reform started, many other professions can get one or two hundred yuan a month as bonus. Teachers still get around ten. As the prices rise, our living standards go down. For most other people, buying a fridge or a color TV is no longer a big deal--- the bonus can take care of it. For us teachers, we have to tighten our belts and save for a few years for it." (Xiao Guiqin)

"The gaps of income between intellectuals and physical laborers are too wide. We don't want to compare with the workers. Yet, money is needed in our day-to-day lives. We are not doing an easier work; we are busy everyday from morning till night, no time to eat well, no time to clean the house, no time to tutor our own children." (Yin Lili)

"We earn too little. A relative came to my house last year. He was sent to Kuwait to work as a laborer for a year or so, and he bought all those modern electric appliances and still had $500 left. We 'well-educated intellectuals' earn less than the uneducated laborer!" (Zhu Lanping)

(3) Academic Advancement

Academically, there are two worries that face the secondary school foreign language teachers: the decline of their language proficiency and the lack of opportunities to further improve their language ability. In a word, they see no academic advancement opportunities for themselves.

It is very difficult for the foreign language teachers to keep up what they once learned in college. As one teacher commented, "It is practically impossible to raise your academic level working in a high schools, especially in a junior high school. Year in year out, you teach the same simple, monotonous stuff, until one day you find that you know only what you have to teach to the student."

Languages are changing and developing all the time. Ms. Xiao said that her Russian "was learned 30 years ago. Many of the expressions and usages are now out of date." But she never had the chance to keep up with the current linguistic trend.

Of particular concern are the abilities of listening and speaking, which took the teachers years of practice to acquire. Mr. Li Liqiang's worry is not based on pure imagination: "After a few years of teaching in the school, you'll clean forget what you learned in college, unable to speak the language or to comprehend what is said."

Ms. Yang Lin expressed her feelings this way: "I've been here a few years. All this time my English has been going down the hill. Even if I were offered another job now, I am afraid I would not be able to handle it." Ms. Zhu Lanping told of her experience: "When I graduated from college, I was as proficient in the language as my classmates. Since I came to the school to teach, my ability to use the language has been declining all the way. I need the opportunity to learn. I must try to leave the school."

Almost everyone is craving for the opportunities to learn. Few get them. Of the teachers interviewed, almost all of them have petitioned to the school administrators for their further training. But for the reasons like "short of hands to teach" or "lack of money for tuition", few have had the luck to receive further training after they began teaching.

One teacher from the Garden Village School commented: "Middle school teachers themselves are not up to the standard from the start. Because of the teacher shortage, whoever knows some foreign languages can come and teach. There is no surplus of teachers to spare for their further improvement in their language proficiency. Some of the teachers of English have no opportunity to even talk to the native English speakers. How can their language proficiency be compared with their classmates who work with native speakers everyday?"

Ms. Wang Guilan feels hopeless about the situation:

> "We are 'born-weak', having studied for only 8 months of English in the college before the Cultural Revolution. We have great difficulties teaching and we don't have the opportunities to learn. School work keeps us always on our toes. Several of our teachers

82

> are either young people without a diploma or elderly ones that majored in Russian when they were at college. How do we manage to teach if we are not given the opportunity to learn. ...We need to improve ourselves for our survival, especially in 'key' schools."

Most schools only pay lip-service to teachers' academic advancement. All they care about is students' grade points. Ms. Mao Xiaoxia felt this very strongly: "We don't have an intellectual atmosphere. Anyone who tries to reform or tries to do some research would be isolated and attacked, instead of supported." Ms. Feng Yiao described her situation as "a donkey in the transitional period, to be slaved until it totally breaks down. The school never gives the money nor the time for me to study."

Mr. Li Kefei mentioned that there is no way he can attend the examination for graduate schools. "The reason you get is that 'secondary schools do not need graduate students.' Neither can you study other subjects because school teachers are not allowed to change their jobs."

The most urgent anxiety comes from those teachers that do not have a formal diploma. It is stated by the State Education Commission that those teaching senior high school students must have at least a four year college diploma and those teaching in junior high schools must have at least a two-year college diploma (3). This policy poses real problems for those who have been working quite well with no diplomas.

Ms. Peng Li only has a vocational high school certificate. She could not keep her anger down when talking about her situation:

> "I have been teaching for ten years, without a diploma. I had no chance to improve myself. Each year, I have shouldered the heaviest workload, which left me no time to study. I am a victim of the system. I graduated from senior high school and then I went to the Foreign Language School and got only a vocational certificate! Now it's time to ask me for the diploma! I worked very hard for years hoping that I could earn the opportunities for further study. But in the end, there was only disappointment. I now feel cheated, tired, empty and hopeless. I have no interest in my work, ready to be kicked out of teaching position when I am no longer needed."

In middle schools, there are no academic ladders for teachers to climb, there is no academic atmosphere for teachers' self-improvement in their special subject area, and there is no linear relationship between years of work and level of scholastic achievement. Teachers are conditioned to be skilled workers in the routine dealings with students and textbooks.

(4) Social Status

It is repeatedly claimed by the Chinese government that teachers are the "engineers of the human souls", and that the whole society should respect teachers and support education. The teachers' experiences show something different. Ms. Hung Jimei gave an example of her own college years:

> "When we were studying in the Foreign Languages Institute where they ran a special teacher training class, we were looked down upon by everybody at the institute, because we were not students to be interpreters or translators, or diplomats. We were in the 'Secondary School Teacher Training Class'. We felt like fourth class human race.
>
> "There are numerous articles in the newspapers trying to boost up the social status of elementary and secondary school teachers, which is a clear sign of the low status of this group of people."

IV. DISCUSSION: WHAT ARE THE POLICY IMPLICATIONS

China is trying all its might to open itself to the world in order to modernize and to catch up with the developed world in industry, agriculture, national defense, and science and technology. Obviously, this attempt is doomed to fail without large numbers of well-educated personnel, who have the international dimension and the communicative competencies in other languages. China's increasing emphasis on the importance of foreign language education shows its effort in this respect. The open-door policy has really enhanced the teaching and learning of foreign languages in the country.

Yet, foreign language education in secondary schools has suffered as well as gained from the new policies, which have provided the interests and incentives to learn foreign languages, and at the same time, distracted a large number of foreign language teachers from the field of teaching. The stability of the teaching force used not to be a major concern for the Chinese in the past because: first of all, there were fewer options that the teachers of foreign languages had other than to teach. Secondly, the government used to have a much tighter control over the job mobility of Chinese intellectuals. With the new open-door policy, foreign language personnel are in great demand in travel agencies, in diplomatic fields, in joint-venture enterprises, in the numerous newly-sprung hotels, in higher educational institutions and research institutes, and, of course, in school teaching. With so many alternatives, people choose the most lucrative and the most exciting with regard to workload and prestige. In comparison with all the other fields, school teaching has little to attract qualified people, with the exception of very few cases in which people simply love teaching.

To compete with other professions where foreign languages are used, schools desperately need money, yet financially they are the poorest of all. As the research shows, a tourist guide or a hotel attendant makes much more than a school teacher. The Principal of the "Key" school gave an example: "A college junior-year student who went to help in travel agencies during his vacation made 40 yuan a day as a local tourist guide and 60 yuan a day as a full-trip guide, plus free meals and free hotel room. After he graduates from college and comes to school to teach, he makes 60 yuan a month!"

It is rare that middle school teachers live in the apartments that belong to the school. Middle schools have neither the money nor the space to build their own residence quarters. Factories have money so they can buy the land , high-ranking government institutions can ask for money to build their own houses. Schools are helpless, watching their own qualified teachers been drained out of the classroom to those places that can offer more for life. Higher education institutions and research institutes do not have a much higher pay schedule for their employees, but they have several benefits that the schools can only envy at. Housing is certainly one of them. Freedom in the pursuit of academic interest and the flexibility in the work hours are another two big advantages. In short, they have fewer working hours, more opportunities for academic advancement and going abroad, more chances to publish, and along with all this, more prestige and money.

The control over the mobility of the intellectuals in China is being loosened, and the concept of free labor market is just beginning to enter the minds of those in control of education. As soon as the teachers learn that it is possible to find another job and enjoy life more, they go after it. The phenomenon of teachers flowing out of schools is partly the result of the new policy that encourages decentralization of the system and of the attempt to open up the labor market. Caught in between are the schools which suffer from the lack of centralized support and the imperfection of free-market labor flow.

Decentralization gives teachers the possibility of leaving the school, while the open-door policies provide numerous positions to accommodate them. As the Principal of a "key" school pointed out, "the difficulties are beyond the school's control." "It is impractical to expect the majority of graduates from normal colleges to come to schools to teach." He complained that "those who do come to schools to teach, which is what they were trained for, feel 'contempted', 'looked down upon', and have a burning desire to leave. Not so accidentally, lots of people come to schools to 'dig the walls', wagging in front our teachers things like housing, better pay, opportunities of going abroad and better working conditions, which we can not provide. It is very hard to get new teachers. Once you get them, there is another battle to keep them."

It is not that the Chinese government does not realize the problem of teacher shortage. In a document issued by the Ministry of Education in 1982, there is the realization that "Foreign language teachers are in acute shortage, and those teaching are of very low quality." (4) According to the 1981 statistics, there were 260,000 foreign language teachers and an additional 150,000 were needed to fill the vacancies (5). The document states that all levels of educational administration should try very hard to keep foreign language teachers from leaving schools, and that it should be ensured that normal college graduates go to schools to teach. In another document issued in April 1987, the State Education Commission reiterated the policies concerning foreign language teachers including their training, recruitment, workload and their living conditions (6). These policies never came down to the schools and teachers. Even if they did come down, it would be unlikely for them to be implemented. One reason is that the general primary and secondary education is financed by the local governments and the policies are issued by the State Education Commission. To put them into practice, the initiative of the local governments is the key. In many cases, education is far from being the priorities of the local governments, and the State Education Commission can do nothing about the implementation. Another reason is that the policies are so vaguely stated that the implementers have too much room for interpretations, or worse, distortions. For example, there is an item stating that "government should show concerns over the improvement in the quality of political, academic and material life of foreign language teachers." (7) There is nothing mentioned about what this exactly means and how to put it into practice. Therefore, the nice-sounding policies become only a lip-service.

If China wants to improve the situation for its foreign language teachers, make up the shortage and boost up the morale, real efforts are needed to improve the socio-economic status of school teachers, especially those teaching foreign languages. Making school teaching an attractive profession, the country needs to make big financial investment. With its present financial capacity, and with so many fields competing for the scarce money available, it is doubtful if the situation can be drastically improved in the near future.

* Key school: Key schools are elite schools in all levels of Chinese education. They select the best students, receive more government money, have better teaching staff and more facilities. It is one way for the Chinese to train high-quality people with limited resources.

** Master teacher: It is a teacher whom takes care of the daily education of a class of students besides his own teaching responsibility. A master teacher supervises all the extra-curricular activities, oversees discipline, and writes school reports for each student in the class.

*** Scales: Salary scales which were set by the government. Each pay-raise would most likely results in one scale higher than before, and each scale is about 10% of the salary.

Notes:

1. China Education Yearbook 1982-1984, (Beijing, China Encyclopedia Publishing House, 1985), p. 28.
2. People's Daily (Beijing, People's Daily Publishing House, September 10, 1985), p. 1.
3. Some Points on the Reform, Readjustment and Management of the Primary and Middle School Teaching Force. Document of Ministry of Education, People's Republic of China, Beijing, August 22, 1983.
4. Directives on Middle School Foreign Language Education, Document of the Ministry of Education, (Beijing, Ministry of Education, 1982).
5. Achievement of Education in China (a book of statistics on China's education), (Beijing, People's Education Press, 1981).
6. Directives on the Reform and Strengthening of Foreign Language Education in Middle Schools, (Beijing, State Education Commission, April 1987).
7. Ibid.

VOCATIONAL EDUCATION OR LIBERAL ARTS EDUCATION: AN IDEA CONFLICT IN CHINA

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As China expands her economic reform in the rural and urban areas since 1978, education has also been undergoing changes. The ideas of schooling, the function of educational system and the content of school curriculum have changed considerably. Vocational education, in this wave of reform, stands out for its unique function in economic development. It is taken out of the limited vocational context and considered to be very important in the economic development of the country. Under such rationale, vocational education, from being totally eliminated during the "Cultural Revolution", revives and prospers in its struggle to find a place in the liberal-arts-dominated school system. But with a culture which looks down upon vocational jobs, a school system which emphasizes exams first and foremost, and an employment system which does not encourage competency, the development of vocational education has encountered great difficulties. In this paper, the author will argue that while China is striving for vocational education, the culture is holding people back from it, and the school system and the employment system are not set up in such a way as to enhance its development. Therefore coordination of reform efforts among these systems is essential.

I. VOCATIONAL EDUCATION AS A NECESSITY FOR CHINA'S GOAL OF DEVELOPMENT

At the twelfth delegation conference of the Chinese Communist Party in 1982, a goal was set that by the year of 2000, China will increase its GNP from 449.3 billion *yuan* in 1980 to 1977.0 billion *yuan* in 2000; people's annual income will be raised from 374 *yuan* in 1980 to 1161.8 *yuan* in 2000; and the number of people working in agriculture, industry and service will change from the present ratio of 7.5 :1.7 :1 (72.02%: 16.34% : 9.64%) to 1: 1 : 1, which means half of the people presently working in agriculture will switch to work in other fields, and the total number of people in service will increase to 60 millions (Program for " the study of vocational and technical education in China in 2000", 1987).

This goal is ambitious, but difficult to achieve. It took Russia 23 years, Japan 19 years, West Germany 29 years to double their economic increase. For an underdeveloped country like China, with a large population of more than 1 billion people, very limited natural resources per capita and insufficient fund for reconstruction, to reach the goal within 20 years is extremely difficult. The only feasible way to increase productivity is to provide effective education, efficiently bringing about human resources development in the labor force. Vocational education is singled out for this task (Program for "vocational and technical education in China in 2000", 1987).

Compared with liberal arts education, vocational education is specific, short-termed, exclusive and dominant. It risks confining one to a small area and be so particular in it that it may limit one's ability to deal with other callings and interests in life, which may in return affect one's functioning in his specialty (John Dewey, 1916). Nevertheless, the economic effect of vocational education is very clear: it is low cost, need-oriented and can be provided to a vast population in a short period of time. It is closely linked to local development and efficient in providing numerous job opportunities. In a word, vocational education can quickly raise human productivity. For this reason, countries such as Japan, West Germany, Soviet Union and the U.S. have paid great attention to the development of vocational education and treated it as crucial to keep their country in a leading position. It seems that vocational education is even more needed in China. China has a huge population, limited natural resources per capita and insufficient funding for reconstruction. The following quotation shows the urgent needs:

> "In 1985, of the 40 million skilled worker involved in state-owned industrial and transportation enterprises, 71% were junior ones, 27% were mid-level and 2% were senior ones. In agriculture, a survey conducted in 1983 revealed that China had 555,000 people skilled in the fields of agriculture, animal husbandry and fishery, which means that there were only four such people for every 10,000 agricultural workers, or two per 10,000 mu of land." (Wei Liming, 1986)

To improve the situation, China will need 6 million vocational teachers by the year of 2000. The goal set by the government is that by the turn of the century, China will have as many vocational schools as ordinary schools, enrolling half of the total student population. In industry, the goal is to reduce tertiary workers from 72% to 23%, and to increase senior workers from 2% to 10%. In agriculture, the goal is to provide the 220 million junior and senior high school graduates with some kind of vocational and technical training for rural development. The task is no doubt very arduous. Vocational education, given its unique characters, is the first choice.

89

II. VOCATIONAL EDUCATION IN A DISADVANTAGEOUS POSITION: FROM PAST TO PRESENT

Vocational education has been in a disadvantageous position over the past three decades. This section will try to analyze the past and present of the development of vocational education and argue that the present school system is far from being effective in serving the economic development of the country and that the development of vocational education is an overhaul to the present school system.

From the Shui Dynasty (about 400 AD) to 1905, China employed an examination system which was used to select government bureaucrats. Those selected would be promoted to high positions, become rich all their lives, and be admired and respected by their folks. This system lasted for about 1,400 years and has shaped people's ideas about education. Subjects that emphasized composition of poetry and articles were considered "formal" subjects to study, while those that required skills and manual labor such as carpentry, blacksmith or commerce were considered "informal" and looked down upon. After 1905, this system was eliminated, and the examination format was transformed, but its function remains, that is, it is still the main means by which one gets an opportunity for higher education and later becomes a prestigious government official or researcher doing mental work.

China has an employment system in which passing the exam and getting higher education is almost the only path that leads to a life with mental work, high social status, high salary and a secure job. This reinforces the idea already in people's mind that it is noble to pass the exam and become a scientist, a professor or an engineer, while it is low to fail the exam and become a farmer or a skilled worker earning a living by doing manual labor. Gradually, liberal arts education became the only choice provided for people. Schools close themselves up training exam-taking experts, having little relationship with social and economic development. In time, education was seen as consumption, much less important than economic reconstruction. Thus, in the past forty years, education has received much less funding than what was invested in industry, agriculture and national defense. This was developed to the extreme during the "Cultural Revolution" (1966-1976), when only a few professional technical schools were left open, and almost all vocational schools were closed under the rationale that to allow the coexistence of both liberal arts schools and vocational schools was to widen the gap between the working class and the intelligentsia. In order for everyone to have an equal opportunity to become an elite, all students should receive liberal arts education. As a consequence, by the end of the "Cultural Revolution", general schools were greatly expanded, enrolling 95% of the students, while very few vocational schools were left, enrolling less than 5% of the students.

The situation has not always been like this. China's first vocational school was built in 1866. By 1909, the country had had 508 vocational and technical schools which were built for learning western science and technologies. In 1926, the number reached 1,695. Because of constant wars, there were few left when the Chinese Communist Party took over in 1949. From then on to 1965, vocational and technical schools experienced great expansion. In fact, by 1965, vocational schools were enrolling as many students as were liberal arts schools. But the Cultural Revolution (1966-1976) totally changed the situation. The following table gives a comparison of the situation for vocational and technical education before and after the "Cultural Revolution":

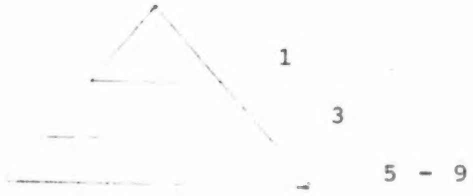
Table I. The Distribution of Student Enrollment in Regular Highs Schools and Vocational High Schools in Huangpu District, Shanghai, in 1965 and 1978

	1965		1978	
	Tot no. of schls	%	Tot no. of schls	%
Reg. high schls	2,000	17.1%	16,291	100%
Voc. schls	8,912	76.3%	0	0
Others	776	6.6%	0	0
Total	11,688	100%	16,291	100%

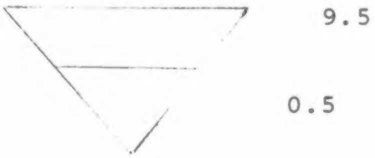
Source: Program for the Research of Structural Reform for Vocational Education by the Educational Research Academy in Eastern China Normal University, 1986, pp.23-35.

As a result, the lack of technical and vocational training has turned out poor human resources with low productivity, resulting in poor living conditions. In urban areas, the annual income per capita in 1986 was 821 _yuan,_ and in rural areas, it was only 397 _yuan_ (State Bureau of Statistics, 1986).

With the unskilled labor force supplied by the school system, the economic structure is reversely built. A proportionate economic structure has a labor force with a ratio of 1 : 3 : 5-9, that is, for every one senior researcher, there should be 3 mid-level workers and 5 to 9 tertiary skilled workers, such as shown in the following model:



When an economy is structured this way, it is usually solid, stable and well balanced. It provides the channel for cooperation and communication among all levels; efficiency and effectiveness are made possible. Contrary to this model, school system in China provides an economic structure with a labor force ratio of 9.5 : 0.5, as shown in the following model:



This means that 95% of the students are in liberal arts without any kind of vocational training and only 5% of the students are in vocational education. This is far from being able to build an effective and efficient structure for economic development. When the 95% unskilled high school graduates enter industrial enterprises, they would have to serve apprenticeship for three years, starting everything from the very beginning. Those who go back to land, too, would have to start all over again, for they can't apply what they have learned from the exam-oriented curriculum to practice. Most of them are found unable to write contract, advertisement or news report. Many don't know the feature of fertilizers after learning chemistry, nor do they know how to use hydro-electric power, the most commonly used energy in China, after studying physics, . In this sense, one can say that ignoring vocational training is a great waste of money and human talent.

The exclusive emphasis on liberal arts and the lack of options for students to branch out have pushed almost all the students to compete for higher education. Because of the lack of educational funding, there are only about 1,700 colleges and universities for more than 20 million high school graduates each year. So, only four to five hundred thousand students out of the 20 million graduates can get into colleges and universities, while the majority of those who know very well how to read and write but have no other skills at all are left without anything to rely on. In urban areas, there are millions of such high school graduates, while companies are seeking only the skilled workers; in rural areas, skills and technologies are badly needed to develop the economy and improve the living conditions of peasants, but only 4 out of 10,000 peasants have received some kind of vocational training. This creates many problems. One is the high dropout rate. The highly competitive exam discourages many students who, seeing little chance to win the battle, lose interest in school and drop out in large numbers. According to the official data, the national dropout rate is 40%, totalling 6 million every year (People's Daily, 1985). In some places, the dropout rate in secondary schools is as high as 72.3% (Zhang Jingyi, 1985). Reflected in the economy, new technologies can not be utilized. In rural China, only 20% of the research achievements can be translated into practice.

III. EFFORTS TO BUILD A NEW SYSTEM

To change this situation, there is a big campaign to develop vocational education. All kinds of propaganda machines are used to highlight its importance. One argument is that economic development depends on the development of science and technology, which depends on the development of education. Vocational education should not be only a small section of the educational system. It should be singled out and be regarded as having equal importance as general education (Fan Anchun, 1984).

Together with the propaganda campaign, some measures have been taken. One important step is to convert ordinary schools into vocational schools. China has more than 200 million students in school, and each year more than 20 million graduate from middle schools and high schools. It is impossible to build many vocational schools and have all faculties and facilities ready overnight. What some schools start to do is to add vocational content to the present curriculum. This is called "local curriculum", aiming at connecting knowledge with local needs and linking theory with practice. The time spent on math, language, physics and chemistry are lengthened or shortened depending on the area the students want to specialize in in the future. In science classes, more time is scheduled for experiment and practice than before. Students are encouraged to use both their hands and brain (Wuxi Twenty-Fifth High School, 1982; Chen Suenyao and Li Zhida, 1984).

The second measure is to urge companies and factories to provide vocational training for their tertiary workers. They are encouraged to use part of their profit to build vocational schools. Researchers and engineers in the company are hired to teach in the evenings and during weekends. In some instances, young workers take off one day every week to receive training both in liberal arts and in vocational skills. The courses include math, English, Chinese language and practical skills used in the job. This kind of school has the advantages of sufficient funding and close connection with employment opportunities (many students are jobless high school graduates who are contracted to be employed if qualified after training). Facilities in the factory are utilized for field training (Zhang Jinhui and Yang Dongliang,1987). The disadvantages of this kind of school are that they are usually operated on a small scale, aiming at training people for the particular comp any only. Schools are easily filled, and when the company no longer needs more people, the school is closed.

The third measure is that schools and companies cooperate to run vocational schools. The companies would predict their future needs, raise money and hire teachers from nearby higher education institutions. The purpose is to avoid impractical curriculum and to increase student's employment opportunities. Most of these schools train people to work in light and service industries. Shanghai provides a good example in this regard. Shanghai is the largest and the most important industrial base in China. It has many important higher education institutions and is, thus, in an advantageous position to experiment with this school-company cooperation. In this way, the expertise of schools and companies are brought together to solve the problem of teacher shortage--- for higher education institutions, the shortage for teachers in various specialties; for companies, teachers in general knowledge subjects (Wang Yu, 1986).

The forth important measure is the "Spark Plan" in the rural areas. The project began in 1985, which the government was to fund more than 1 billion dollars for its implementation. It aims at helping hundreds of thousands of local industrial enterprises, specialized household businesses and family industry to acquire new skills and technology for economic development. 1.5 million secondary and high school graduates are to be trained each year to master skills that have an immediate impact on improving people's life and on developing the local economy. Thousands of teachers and researchers from higher education institutions and from developed industrial cities are to be sent to the countryside to train peasants and help find solutions to improve their lives. The trainers get higher salaries than they would otherwise do during the term they serve there, which lasts from half a year to two or three years. The intention is to help a group of rural peasants to become rich first so that they will serve as the example and become "sparks" that will light up a meadow of fire.

IV. DILEMMA FOR VOCATIONAL EDUCATION: AN UNBALANCED BATTLE.

There is a picture in *Newsweek: "On Campus"* (March, 1988), in which a university student stands in the middle of two groups: the employers and the school educators. Each of these groups are pulling the student to their side. The caption reads: "Tug of War: Students must satisfy educators, who want to focus on intellectual development, and employers, who want to focus on vocational preparation". This is being repeated in China nowadays; but the battle is unbalanced: the educator's side has much stronger pulling forces because the parents, students and many social forces are standing behind them. It is the college and university entrance exam which unites them up for this effort.

By 1986, China has established more than 6,000 secondary vocational and technical schools with 1.75 millions students, 8,000 vocational schools with 2.29 million students, and 118 technical and vocational schools of higher learning with 60,000 students (Wei Lining, 1986). Adding them up, the number reaches to 4.1 million. This seems to be a large number, but comparing with the number of students who enroll in liberal arts high schools, which is 11.94 millions, the number is not that significant (State Bureau of Statistics, 1986).

The problem is that even though the number of vocational schools has increased, not many students want to enroll in them. The custom of looking down upon skill and manual work, and looking up to intellectual prestigious positions is deeply rooted in the society. According to a survey which asked a group of students about their choice of future occupation, those who answered that they were willing to take up farm work were very few----only 2.3% among junior high school students and 3.2% among senior high school students, while 62.26% wanted to do mental work (see Table II):

Table II. Occupation Choices (%)

Junior High Students		Senior High Students	
Occupation	%	Occupation	%
1. industrial worker	22.10	1. scientist	21.17
2. scientist	14.60	2. engineer	15.83
3. soldier	14.23	3. industrial worker	14.77
4. teacher	14.23	4. teacher	13.70
5. doctor	10.11	5. doctor	11.56
6. engineer	7.49	6. soldier	7.83
7. service worker	6.74	7. service worker	5.34
8. farmer	2.30	8. farmer	3.20

Source: Tong Nian et al., 1981, pp. 27, 36-40.

The favorite subjects among junior high students are math, physics and language; among senior high school students are math, physics and chemistry (see Table III).

Table III. Favorite Subjects (%)

Junior High Students		Senior High Students	
Subjects	%	Subjects	%
1. math	29.21	1. math	33.27
2. physics	13.86	2. physics	16.19
3. language	12.36	3. chemistry	11.74
4. English	7.87	4. language	8.01
5. physical cul.	5.62	5. English	7.30
6. history	3.0	6. physical culture	3.38
7. chemistry	3.0	7. biology	2.85
8. music	3.0	8. politics	2.49
9. Geography	0.75	9. music	2.31
10. drawing	0.75	10. drawing	1.96
11. biology	0.75	11. history	0.71
12. politics	0.37	12. geography	0.18

Source: Ibid, p. 17

Table III indicates that the higher the grade, the more likely that the students would favor liberal arts courses like math, chemistry, physics and language. Students' interests are shaped by the fact that all these subjects are tested in the college entrance exam and are the most essential courses if one wants to be in hard sciences, which in China are considered better than social sciences. Schools put a lot of emphasis on these courses: they are given more time and better teachers are assigned to teach them. Students, in order to do well in these subjects, ignore other courses such as biology, history and geography. A survey done in 1986 indicates that there have been little changes in this regard over the past five years (Chen Zhijian, 1986). The influence of exam on student's academic interest and their choice of occupation are clearly seen here.

In the past forty years, almost all schools have been built and run as liberal arts schools, so people tend to hold the same ideas and standards when they build vocational schools. The newly built vocational schools, though on smaller scales, are often equipped with their own administrators, workers, faculties and a complete set of physical facilities, as found in a liberal arts school. It thus becomes quite expensive to build a vocational school.

Quite a few vocational schools have experienced the difficulty in recruiting students. There was a school that could accommodate more than 400 students recruited only 10 students in one academic year. The lack of qualified teachers is one discouragement to students. Many teachers have received just three or six months' training before they go to teach vocational courses. Some courses that are badly needed in the local areas can not be offered because there is no way to find teachers with the specialties or to get the necessary facilities. It's not surprising that students who study in vocational schools are dropping out in large numbers, most of whom go back to ordinary schools and prepare for the national college entrance exam (Wang Yuehong and Zhang Jingshen, 1986).

V. WHAT CAN CHINA LEARN FROM OTHER COUNTRIES?

In conclusion, when China is pushing very hard for the development of vocational education, the culture is deeply rooted for liberal arts education only, the school system is for college preparation first and foremost, and the employment system is no t set up to facilitate, but rather in some ways to hamper the development of vocational education.

China has a lot to learn from other countries. In some economically successful countries like Japan and Singapore, which also share similar culture with China, it is found necessary to make vocational education compulsory. In these countries, not only t he government, but also all the local levels put in persistent efforts. Vocational education is supported not only financially but also morally. As important is the change in school system which should be set up in a way to reward excellence based not only on exam scores, but also on practical skills and abilities. Most important of all, competition should be brought into the employment system. Schools can not exist without reflecting the needs and development of the economy. Employers will not be allowed to hire those who have not received any kind of professional training. Only when the quality of education and diversity of education become the mutual concern of both schools and the society can China really develop her vocational education and fulfil her ambitious goals.

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NATURAL AND SOCIAL SCIENCES,

A DIFFERENT STATUS?

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This study is to examine the social status of intellectuals in post-Mao China. More specifically, it tries to identify the factors that cause the status differences between natural and social scientists, and explore the political and economic contexts in which the "should-not" happened, namely, the status difference among social groups in a society that strives to make everybody equal, and why this is unavoidable even with a subjectively good intention.

Definition of Terms

Before we go into a more detailed study of the phenomenon, it is necessary to define the terms "natural sciences" and "social sciences" as they are used in China.

Generally speaking, universities and their departments are spoken of as two types; they are either "li-ke" or "wen-ke", which, if translated literally, mean social sciences and natural sciences respectively. Yet in Chinese, both terms include a lot more than what they mean in English. "Li-ke" could mean natural sciences, applied sciences and engineering, while "wen-ke" includes liberal arts as well as social sciences and humanities. For convenience' sake, the terms in this paper are used in the more general sense.

Sample Investigation

In June 1983, an investigation of some sample professions was carried out in six neighborhood committees of six municipal and suburban districts in Beijing (Xuan et al. 1985). The profession categories used in the investigation were chosen from a detailed list of more than three hundred professions of the "Profession Classification Table" compiled by the State Statistical Bureau. For the purpose of investigation, fifty professions were selected for analysis. They were ranked from the most ideal (10 points) down to the least ideal (1 point). The result is shown in Table I (see appendix).

A review of the table that the top ten professions are the so-called intellectual professions that demand proper education, sophisticated mental work and a grasp of profound knowledge. Ten years' nightmare for the Chinese intellectuals has passed and their social status is on the rise. However, among the top ten professions, there exists another distinct phenomenon --- the difference between social and natural sciences. Social scientists ranked fifth on the list with an average of 7.16 points. Compared with the number four profession, this shows a difference of 0.38. However, the differences between the first, second and third profession is 0.02, and that between the third and fourth is 0.04. Clearly, the difference is more significant with the former than it is with the latter.

Two questions can be asked after a brief review of the table. First, why is it that the mental occupations are obviously people's choice. Secondly, although the sample report didn't give the sample size and thus no statistical conclusions could be made from the table alone, one could still raise the question: why does there exist the difference between natural and social scientists (assuming that the sample results are representative of the population)?

The Case of Social Status

When we talk about social status, we are talking about "a characteristic of people that rank-orders them and affects their role relations in accordance with this ordering." (Blau, 1977) What, then, affects the characteristics? In modern society, wealth, power and prestige are the three main factors that decide one's social status, sometimes with a different rank-order. And occupational status is seen as the most important indicator because it reflects economic position, power and life style of most people. Every individual is motivated to maximize his rewards. In China, income is a minor aspect of the issue, since the salary scale is decided by the state and remains stable on the whole across the country, exhibiting only some slight variations among different geographic areas with regard to their levels of economic development.

Salary levels vary more vertically than horizontally in China. College undergraduates have the same income level upon graduation, and graduates have a slightly higher level of income than undergraduates, regardless of the fields they work in. Prestige goes mostly with one's occupation not only because of the traditional Chinese belief that "a man of books is superior to all walks of life" but also because in the absence or limited inheritance of wealth and private capital, the educational system allocates almost all occupational positions, and social status comes to be more closely tied to occupational positions instead of income. When Western sociologists talk about equality in social status, one of the measures is the equality of income. In China, where the government tries tenaciously to narrow the income differentials among occupational groups in order to eliminate class differences, the assumption that income is the only or primary economic reward does not apply. In fact, there are enormous differences in power exercised by the various occupations in addition to the differences in privileges enjoyed by the people of the same income level.

Then the questions arise: what is it in the process that affects the prestige and power that are so important in an individual's social status, and what's in there that makes social sciences lower in prestige than natural sciences? Where in school and in society does it happen? What reinforces it or what supports it?

Government Policy and Its Impact

The first aspect I shall look at is the government policy. As Karabel and Halsey pointed out, "a critical element of power of dominant groups resides in their capacity to improve their own educational and cultural ideas on schools," (Karable and Halsey, 1977) and consequently, influence the outlook of the population. In his essay, "the Chinese Literati" (1972:230-241), Weber also showed that the ideal of the cultivated man that is held up in a given society is an outcome of the power of the dominant social group to universalize its particular cultural ideal. Viewing in this light, it is understandable that the government, composed of members from the dominant social groups, acts as a critical agent in influencing, and sometimes, determining the power and prestige enjoyed by certain social groups. The ups and downs of the intellectuals in China since 1949 have always been the results of government policies. By restricting their upward mobility, restraining their academic freedom, confining their autonomy, and purposely devaluing their personality through propaganda, the government has successfully manipulated their social prestige and image according to its political needs.

The goal of "Four Modernizations" has brought Deng and his government to recognize the value and importance of intellectuals in building a new country. By declaring that the "crux of the four modernizations is the mastery of science and technology." 1 Deng has consciously laid the emphasis. The new leaders anxiously made amends to the scientific and technical people for the sufferings imposed on them by the Cultural Revolution. Such compensation was done not only through public recognition of the essentiality of their contributions to China's development, but also by involving scientists in the formulation of the country's science policies. This new orientation consequently affected policies in all areas.

In their effort to raise the scientific and technological level of the nation, they somehow neglected the other side of the coin --- the social sciences and humanities. For instance, in the discussion of quality education, basic studies, the selection of outstanding students for advanced study and research, as well as the role of the intellectuals in education, attention is usually focused on science and technology. Deng Xiaoping's statement regarding "mental workers who serve socialism" and his assurance that intellectuals would be relieved, to a considerable extent, of the pressure of "political study" and ideological remodeling were made at the National Science Conference with specific reference to scientific and technical personnel. "Scientists and technicians," he said, "should concentrate their energy on scientific and technical work.... At least five-sixths of their work time should be left for their scientific and technical work." The emphasis on basic and theoretical studies is applicable mostly to science and technology, and the provision for outstanding students to skip prescribed courses and graduate ahead of time was included in the Outline National Plan for Science and Technology.

Where does this leave the social sciences? Are they being pushed to a forgotten corner? The status of social sciences is reflected in the school curriculum, in the interest of the students, and in the response of the scholars in those fields as a result of government policies. If social sciences are considered to be of minor importance, the curricula of schools and universities are likely to be dominated by science and technology, student interest would be directed to science and technology far more than to subjects that are not so likely to receive recognition or to lead to jobs. The best talents would be drawn to science and technology (Chen, 1981), the prosperous career paths would go to those who study science and technology, and the effect of all the above would reinforce each other, bringing more prestige and importance to the natural scientists.

Curricula

Burnstein argues that "curriculum defines what counts as valid knowledge, pedagogy defines what counts as a valid transmission of knowledge, and evaluation defines what counts as a valid realization of this knowledge on the part of the taught." (Karabel and Halsey, p68, 1977) With the government's stress on science and technology, institutions of higher education all place their emphasis in accordance with the government orientation. This is, of course, not surprising since the educational system is centrally controlled and its operations planned.

Statistics shows that in 1981, 623 different courses were offered for natural sciences, a 348% increase since 1955, while only 168 courses were offered for social sciences, a 159% increase. (China Educational Almanac 1949-1981) The authorities state that there is no national boundary between sciences. With less restrictions on the curriculum, the departments are able to provide the students with new ideas and technologies. With social sciences, however, the policies are more strict. A realm of the superstructure, research in social sciences can never be allowed to deviate from the Marxist-Leninist revolutionary guideline and the theoretical fundamentals of the Party's policies.

The curricula of social sciences in both middle schools and colleges are out of date. In one study (Luo & Shen), the figure shows that 24.7 percent of the 936 middle school students responding to the investigation consider politics 2 as the course they dislike most. Yet, politics together with the history of the Chinese Communist Party are both required courses in middle schools and colleges. It is a common practice for college students to cut these classes. Marx's Le Capital is used in many departments of philosophy as a major textbook for undergraduate as well as graduate studies. The gap between China and the Western countries in social sciences is much larger than it is in natural sciences. For instance, in departments of physics, chemistry, biology and electric engineering, the undergraduate teaching in China has reached a considerably high level such that most of the Chinese students enrolled in similar departments in the United States are able to pass the qualifying examination within a year or half a year's time, because they have already covered the materials in their undergraduate studies in China. But in departments of social sciences, Chinese students do not enjoy such advantages, since they have learned in China very different things, with Marxism-Leninism being the guiding ideology in every aspect of social sciences.

Investment and Enrollment

Trends in investment in education also reflects the policy orientation of the government. In 1983, state investment in capital construction was 984 million Chinese yuan for natural sciences, representing 1.7 percent of the total investment, while social sciences only received 59 million yuan, merely 0.1 percent of the total (China Statistical Yearbook, 1984). Less investment brings less enrollment. In the twenty years from 1928 to 1948, a total of 51,000 graduated from political science and law. In the thirty years after Liberation in 1949, only 28,000 were trained. In 1949, 16.6 percent of the total college enrollment were in finance and economics. By 1976, the figure fell to only 1.2 percent. In 1981, the percentage was restored somewhat to 3.78 percent, but it was still much less than that in 1949 (Peng, 1983). With the total enrollment of 1.17 million in 1949, 16.6 percent means 194,000 students enrolled in finance and economics. The total enrollment in 1983 was 12.07 million, or 10.93 times over that in 1949, yet 3.78 percent only brought 483,462 students into finance and economics, a mere 2.49 time increase. Less enrollment, less investment plus the various policy restrictions have consequently resulted in less academic achievement, which further dampens the prestige of social sciences.

Institutional Stratification

In their "Power and Ideology in Education", Karabel and Halsey argue that "schools ... play a crucial role in legitimating inequality by internalizing failure. the structure of the educational system upholds those meritocratic values that justify differential rewards, and the separation of the ±successful' from the ±failure' provides daily object lessons in inequality." Schools in a socialist country are of no exception. The multiply examinations from primary school onwards legitimately differentiate students into various academic classes which justify their access to differential rewards in terms of types of higher educational institutions as well as academic departments within those institutions.

The educational system in China contains at each level formal distinctions of several different types of schools. At the primary level, there are rural "people-run" schools financed primarily with local resources, general urban schools, and urban schools officially designated as key schools. The key schools are further stratified among themselves, from district key schools up to national ones which are directly administered by the Ministry of Education. At the secondary level there are rural "people-run" schools, urban specialized technical-vocational schools (which provide a terminal education for future skilled workers, technicians, teachers and even administrative and technical cadres), general urban schools and key urban schools. At the tertiary level, added to the already existing varieties of colleges and universities ranging from agricultural colleges up to key national comprehensive and science and engineering universities, are television and evening colleges at the bottom and opportunities for overseas studies at the top.

Such a distinction of school types forms a clear status hierarchy among the schools at each level. they are unequal as well as separate. Key schools admit the most gifted applicants and promote the largest number of their graduates to the next educational level. Each type of school offers its students a different future and has its own distinctive social "charter," a social recognition of what it means to be a graduate of that institution. Graduates of the approximately one hundred key national universities which recruit the best students across the entire country will occupy the top of the economic and social ladders and will live in the most desirable cities. At the very pinnacle of the status will be the students who are sent abroad to study with government funds. When they return they are likely to enjoy even more professional influence and social deference than their predecessors who studied in the Soviet Union during the 1950s. (Ginsburg and Lalor, 1984)

Among the various differentiations of educational institutions, status difference between natural and social sciences departments is reflected in the following ways.

1. clientele interests

The issue of student interests reflects the function of human capital theory, which sees education as an investment in human beings themselves. The reason that people make investment is to expect benefit in the long run. In countries like the United States, certain levels of education lead people to certain degrees of mobility, income and social status. This is also true in China, though income does not count as much as it does in capitalist societies. However, mobility and the status of a profession play the key role in intriguing people into competing for the limited seats in the classrooms of the higher educational institutions. In 1981, only 5.74% of the senior high school graduates enrolled in colleges and universities, an most of them went for natural sciences (China Educational Almanac, 1949-1981). It is true that the educational planning provides more opportunities in natural sciences than in social sciences, but more importantly, the investors are considering the possibilities of getting more benefits in the future. As Foster argues, "aspirations are determined largely by the individual's perception of opportunities within the exchange sector of the economy, destinations by the actual structure of opportunities in that sector." (Foster, 1965) Table II (see appendix) demonstrates the interest of middle school students.

It is clear that the investors were very sensitive to the distribution in the labour market. The differences existed in the choices between junior and senior high school students suggest that the nearer one gets to the labour market, the more sensitive one becomes in deciding his involvement in it. In school subjects, the top five choices among senior high students are the very five subjects tested on the university entrance examinations for "li-ke", while "history" and "geography", which would replace "physics" and "chemistry" in the exams for "wen-ke", are dropped to the last. Obviously, "li-ke" specializations are what these students aim for. The one-sided inclination exhibits strongly people's perception of the opportunities in the labor market. The tendency is reinforced by some schools which divide their classes into two types, deliberately preparing the students for the two sections of the exam.

The passing score in the college entrance examination varies between natural science and social science, with the former higher than the latter. The students compete to the last of their potentials and only give up when possibilities get really small. Many go to "wen-ke" classes when they fail to do well in the other classes. Among the 92,200 young people in Beijing who took the college entrance examination in 1982, 64,700 listed science as their first choice for a college major (ED 238 716).

Another study (Han et al) argues that the ideal and choices are very much influenced by family, society and the school itself. The research was conducted in 1980 on 738 middle school students, the factors cited as influential on choice making are: family, society, school and the student's own interest. The results show that students' own interests account for 30.22 percent, the other factors account for a total of 69.78 percent, with 28.32 percent accounted for by family, 23.85 percent from school and 17.62 percent by the society. Students living in an environment composed of families, teachers and public opinions are, in fact, under tremendous pressure in choosing their careers. For the family, to get the children into college is a matter of both family prestige, upward mobility, and improved old-age security. For the school, in the word of a representative of the National People's Congress, "education in middle and primary schools is lopsidedly aimed at raising the proportion of students who can pass entrance examinations into higher schools" so as to raise the school's prestige. For the society, encouragement and praises accompany those who survive the competition; and this makes those who fail the exams lose hope for any bright future. Since education is a form of investment, costs and benefits have to be taken into consideration. In the long run, private returns to investment in education are weighed as well.

2. life chances and rewards

The life chances and rewards for intellectuals can be specified into the following categories: chances of going overseas to pursue one's study, chances of being promoted, and academic freedom.

According to Lampton et al (1986), far more natural science majors than social science majors have been sent out by the Chinese government. For each year between 1979 and 1984, the percentage of science majors in the government-sent Chinese students and scholars remains high with only a slight decrease over the years: 88%, 83%, 83%, 82%, 80%, and 79% respectively. In 1986, of all the 574 undergraduates graduated from the China University of Science and Technology, 474 went abroad to pursue postgraduate study (Guangming Daily, Sept. 19, 1986). Foreign training has become a critical component in status formation.

From the turn of the century till now, China's scientific elite has been almost exclusively foreign educated (ED 238 714). They form the core in science and technology and quickly rise to prestigious positions in the government or the professions. Being foreign trained not only brings back the prestige but also other rewards as well. Income is one of them. In 1980, the State Council ratified a joint report by Ministry of Civil Affairs, General Bureau of Labour, Ministry of Finance and Ministry of Education on the salary of undergraduate and graduate students from higher education institutions. The report suggests that the salary of foreign-trained undergraduate or graduate students will be a scale higher than the domestically trained students of the same level (China Educational Almanac, 1949-1981).

Promotion is another reward which directly leads to academic prestige. In China, seniority has always been a critical factor in deciding one's promotion, politically or academically. But when one has a diploma from foreign educational institutions, exceptions are not uncommon.

Academic freedom is a reward that favors natural scientists in a sense that natural sciences can hardly be connected with political trends. It is purely technical and its development will contribute to the modernization of the country. Furthermore, the academic level is so exclusive that it is impossible for the authorities who lack the knowledge of it to totally control the setting. The occupational autonomy of natural scientists is relatively high. But with social scientists, not only are they bound up by the policy restrictions in doing research, but also restrained by an atmosphere of academic constraint. There would be nowhere to publish anything that is incongruous with the Party's requirement. The social scientists are constantly aware of the possibility of being labelled "bourgeois social scientists" and blamed to have failed to recognize Marxism-Leninism as the core of social studies. Lack of academic autonomy means lack of power in deciding what to do.

Though both natural and social scientists are intellectuals, differences do exist in terms of power and prestige. The fact that very few people have been allowed to study social sciences abroad, that precautions have to be taken before one gets access to anything that is contrary to the ideologies that have been taught throughout one's life, and that only viewpoints incongruent with Marxism-Leninism can be criticized have made those who would have been interested in social sciences stay away from them.

Conclusion

The discussion above has shown that there does exist differences in social status between natural and social sciences, between natural and social scientists. Social status is affected by three factors: income, power and prestige. The three factors interrelate with each other while government policy, institutional stratification, academic freedom, life chances and rewards, and occupational achievement affect power and prestige. According to this model, because of less autonomy, less academic freedom which result in less occupational achievement in the social sciences, the power and prestige of the social scientists are somewhat lower than those of the natural scientists, which in turn affects the status of social sciences. In all of the process, the governmental policy plays a decisive role in making less educational investment in social science research, allowing less freedom, and providing less career prospects to social scientists. All this has effectively made a career in social sciences less desirable. If this is the case, then there is the possibility that when the economic development of the country advances to the stage where social sciences are attracting attention, then the change in the official policy will bring a different status setting for the social sciences as well as the social scientists. But under the current political atmosphere in China and with the present Party policy, one would not expect a change in the near future.

APPENDIX

TABLE I

rank	profession	points
1	university teacher	7.62
2	medical doctor	7.60

3	natural scientist	7.58
4	electric engineer	7.54
5	social scientist	7.16
6	civil engineer	7.09
7	journalist	7.08
8	writer	7.06
9	high school teacher	6.33
10	librarian	5.95
11	cadre of department or director level	5.93
12	accountant	5.90
13	electrician	5.82
14	cadre of division head level	5.76
15	secretary	5.74
16	sportsman	5.44
17	mechanic	5.24
18	driver	5.40
19	primary school teacher	5.03
20	cadre of section chief level	4.99
21	product inspector	4.83
22	typist	4.65
23	nurse	4.55
24	handicraft worker	4.45
25	fitter	4.31
26	actor or actress	4.22
27	clerk	4.16
28	textile worker	4.16
29	printing worker	4.12
30	electrician	4.01
31	purchasing agent	3.89
32	tailor	3.76
33	postman	3.64
34	shop assistant	3.50
35	food processing worker	3.44
36	cook	3.43
37	policeman	3.36
38	chemical worker	3.33
39	plumber	3.32
40	painter	3.27
41	ticket seller	3.25
42	attendant	2.89
43	foundry worker	2.59
44	construction worker	2.25
45	miner	2.04
46	barber	1.90
47	sanitation worker	1.90
48	loader	1.63
49	pedicabman	1.25
50	nursemaid	1.25

Source: Xuan et al, Chinese Education, Spring, 1985

TABLE II

Choice and Desires for Future Occupations

JUNIOR MIDDLE SCHOOL			SENIOR MIDDLE SCHOOL		
rank of choices		% of students choosing it	rank of choices		% of students choosing it
1.	worker	22.10	1.	scientist	21.17
2.	scientist	14.60	2.	engineer	15.83
3.	armyman	14.23	3.	worker	14.77
4.	teacher	14.23	4.	teacher	13.70
5.	doctor	10.11	5.	doctor	11.56
6.	engineer	7.49	6.	armyman	7.83
7.	service personnel	6.74	7.	service personnel	5.34
8.	peasant	2.30	8.	peasant	3.20

Source: Tong et al, 1981

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TRAINING AND DEVELOPMENT OF DISTANCE EDUCATION IN CHINA

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1. Introduction

China is a country of adults -- about 68% of its entire population are adults, (1). It has long been realized by the Chinese people that education, especially education for adults, is the key to fast technological development, the improvement of people's living standard and welfare, further civilization of the nation and the economic revitalization of the country.

As a developing country, China has been making constant efforts in seeking new ways, new methods, and new technology to carry out adult-educational programs in a better, more efficient, and more economical manner. It has been discovered that distance education is a promising choice for realizing this end.

During the past 30 years, hundreds of millions of illiterate farmers have learned to read and write (2) and tens of millions of workers and government employees have been trained and retrained through various adult and continuing education projects. These remarkable achievements could be attributed to the adoption and implementation of Distance Education.

2. The Rationale for Distance Education

Distance education is defined as "an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner." (3) Distance education is made possible only by using education telecommunication technology. Rapid adoption and vigorous implementation of distance education is attributable to the unique characteristics of distance education, which have helped adult educators to solve such problems as insufficient funding, inconvenient transportation, teacher shortage, program personnel shortage, and mobility of learners. Generally speaking, distance education has numerous advantages over traditional methods of teaching, as the following table shows (4).

Another way of saying this is :

(1) Educational technologies enable distance education to be accessible to larger populations, since "distance education extends the human sense of touching,

smelling, tasting and (especially) hearing and seeing. Such extensions allow an individual to reach out in space and time, and thus obtain information that would not otherwise be available." (5) For instance,

The Advantages of Distance Education Over Traditional Education

Distance Education	Traditional Education
Self-paced	Group-paced
Heterogeneous Collectivity	Homogeneous Group
Home, Work-place	" Classrooms "
Multi-media	Textbook/Teacher Oriented
Active	Passive
Capital Intensive	Labor Intensive

In Formal Education

Type of Education	Average Number of Students One teacher Teaches
Primary Education	25.2
Secondary Education	17.2
Higher Education	4.4
(6)	

In Distance Education

Type of Education	Average Number of Students A teacher Teaches
Primary Education and Literacy Classes	62.22 and up
Secondary Education	47.41
Higher Education	5.41
(7)	

(2) Telecommunication technology is able to cover more areas where education is badly needed.

In China, there are 26 million regular schools of various levels located mainly along the coastal areas and densely populated regions (8) while distance education alone covers all China's provinces, autonomous regions and municipalities except Tibet and Taiwan (9).

(3) Distance Education is a solution to teacher shortage and, at the same time, provides quality teaching.

For almost 40 years, China has had a severe shortage of qualified primary teachers and adult educators. China intends to use distance education in ways that will contribute to both the quality and quantity of teaching (10). Sometimes a master teacher is able to reach, with the assistance of educational telecommunication technology, as many as 7 million to 100 million students at a time.

(4) Distance Education is time saving.

Educating adults using telecommunicational technologies shortens learning time by a large margin. For instance, the length of distance learning is:

Type of Education	The length of Distance Education
Primary Education	0.2 -- 1 year
Secondary Education	0.5 -- 2 years
Higher Education	2 ---- 3 years

(5) Distance Education is Cost-effective.

"The attractiveness of distance teaching for the economist lies in its use of mass-production methods, and the changes which these bring to the structure of educational cost. Using traditional classroom methods, the cost of education rises in proportion to the number of children being educated. With Distance education, on the other hand, the marginal cost of each extra student is quite small. Indeed, if radios are widely distributed, then it costs no more to broadcast to a million students within reach of a transmitter than to a hundred." (11)

Because Distance Education requires no or few schools and classrooms, fewer numbers of teachers and administrative personnel, it is far less costly than formal education. In addition, China has also been trying to keep the price of distance educational aids, such as radio and television sets, as low as possible so that the broad masses of people can afford them. For instance, (12)

Distance Education device	Cost	Accessibility
Portable Radio	$ 1.8	Personally owned
Audio Recorder	$ 20	Owned by a person/family
Television Set	$ 52	Owned by a family
Small-Power Broadcaster	$ 71.4	Could be owned by a village serving about 1000 households

3. The Role of Distance Education

" The education of the young is ... a necessarily slow process. In this context adult education comes to play a very important part. Not because it is per se a quicker process... but mainly because it has time saving and cost reducing properties, such as a faster turnover rate. You do not need to grow up to use what you have learned; the skills achieved can be used immediately." (13)

Distance Education has played a very important role in the entire learning and training system in China. Because of its vast adoption and implementation, the illiterate rate has been reduced drastically from over 80% of the population in 1949 to 20% today (14). In the past decade or two, more than 150 million illiterates have learned to read and write. More than 39 million people have proceeded to reach the level of primary education. More than 12 million have qualified as graduates of secondary or technical education and more than two million have graduated from college or university (15). These achievements can be largely attributed to the diffusion and implementation of distance-education technology. In 1985 alone, 3.5 million illiterates learned to read and write, more than 8 million adults received primary education, more than 5 million adults received secondary education and about 1.7 million received higher education (16).

4. Four Types of Distance Education

Different types of distance education have been adopted to meet different education needs and to suit specific situations.

(1) Distance Education Through Wired Broadcasting

China adopted wired broadcasting technology in the early 1950's when it decided to launch a massive distance education program for farmers. Wired broadcasting usually uses a small- or medium-powered broadcaster to transmit educational messages to rural areas through wires. The central government promoted and supported at least one broadcasting station in every county to serve as many villages as possible. Usually the station was set up at the district level (under the county level) and linked to one or two loudspeakers in each village. It delivered literacy education programs, farming knowledge and skills, stories of successful farmers to encourage the adoption of technical innovations so as to increase agricultural yields. (17)

The effect of the this type of education was immediate. Within two years, a nationwide rural-area broadcasting network was formed. This rapid adoption was attributed to several reasons:

a) Farmers were extremely enthusiastic, supportive and satisfied with the programs which were all tailored to suit local needs and tastes. They were very excited about the technology because in the areas where they lived there were usually no electricity, no radio and no cultural activities, and it was their first time to hear educational and entertainment programs.

b) It was easy to train the technical and broadcast personnel. Often times, the broadcast person and the technician were the same person. The apparatus was easy to handle and easy to repair.

c) The life style of the Chinese farmers at that time involve little human and social interactions---farmers worked on their individual land during the day and went back to their own homes after work. After the implementation of distance education, farmers often gathered around under the loudspeakers to listen to the programs and discuss what they had learned. They had a better understanding not only of their lives and the world outside, but also of their fellow villagers.

(2) Distance Education Though Two-way Radio Device

The use of the two-way radio devices in distance education "as a stimulus to self-development...enlists the active participation and cultivates the continuous feedback of the audience, most of which is engaged in agriculture. Long project goals are both practical and idealistic: encouraging self-reliance and self-expression; fostering the social integration of the disenfranchised by making them aware of the economic and social barriers they must work against; providing practical information related to social problems and income-generating activities; promoting activities aimed at raising living standards; and providing recreational opportunities and entertainment." (18)

In the 1960's, China started to produce low-cost, small/medium-power two-way transistor radios for farmers' distance education. This technology provided a semi-two-way communication device which could serve a village of 200 to 800 households. It contained a microphone, a record player, a pre-amplifier, a power-amplifier and an intercom switch. Usually a mini-broadcasting station was set up in each village using the device which was connected to a loudspeaker in every farmer's home. The advantage of the two-way radio over wired broadcasting is that it enables the broadcastman or teacher to interact with farmers.

Because the device was almost maintenance-free, the purchase price very reasonable, the operation simple, and the programs well designed and implemented, the two-way radio became extremely popular and successful.

(3) Distance Education Through Radio and Television

Radio and Television "have chiefly attracted the attention of non-educators to instructional media. Television, when it became available, proved able to deliver comparable audio-visual experience to many classrooms simultaneously, with an ease that films could not match. Instructional television could not only transport a gifted teacher to learner, but could also bring with that teacher more elaborate illustrative materials that any classroom teacher could possibly have at hand." (19)

Rapid adoption and diffusion of radio and television in the late 1970's were due to affordability and availability of the media. The people's consumption power started to improve drastically and mass production of radio and television was reassumed when the Cultural Revolution was over. As a result, the media reached around 700 million people in 1984, as the following two tables illustrate (20).

Household Income and Expenditure of Urban Population
(Sample Survey)

Durable Goods Possessed by Every 100 Households

Item	1981	1982	1983	1984
Radio Sets	100.52	103.04	104.55	103.11
T.V. Sets	57.65	73.31	83.15	87.42

Household Income and Expenditure of Rural Population
(Sample Survey)

Durable Goods Possessed by Every 100 Households

Item	1978	1981	1983	1984
Radio Sets	17.44	42.25	56.82	61.13
T.V. Sets	0	.87	3.99	7.24

The quick diffusion of radio and television had a very major social impact, directly and immediately, on the use of leisure time, as television grabbed huge gobs of time away from reading and other activities (21). This laid a solid foundation for the rapid development of China's distance education system by radio and television.

China's Radio and Television Universities were run on a trial basis in Beijing, Shanghai, and Shenyang to train various professional personnel. They were closed up during the Cultural Revolution and re-opened in February 1979 (22).

In February 1978, the Ministry of Education and the Ministry of Radio and Television, with the approval of the State Council, decided to jointly sponsor radio and television universities. Today, there are 29 radio and television universities, about 600 branch institutions at the municipal level and in various trades and industries, as well as 1,100 small groups at the county level. There are over 20,000 study classes in enterprises and higher adult education through radio and television. (23)

China's radio and television universities enroll mainly workers, staff members and educated youth, and train them professionally at the university or college level. They also provide conditions for raising the culture and scientific awareness of the general public. The universities use a combination of radio, television and correspondence. Courses in science and engineering are given chiefly on television and complemented by radio and correspondence while course in liberal arts and economics are given mainly over radio and complemented by television and correspondence. Lessons given by the Central Radio and Television University are relayed nationwide through a microwave hookup, while general radio lessons are broadcast by local radio stations. Parts of the lessons are made into cassettes or video-tapes for distribution to radio and television universities at various level (24).

So far, these universities have formally enrolled 1,400,000 students in six academic years, and hundreds of thousands of students have attended radio and television lectures at home or at their work-places. Over the past six years, radio and television universities have provided opportunities for two million people to receive higher education. They have turned out 340,000 graduates in three batches and 400,000 people have completed study of a specific subject (25).

The success of this type of distance education is largely due to the fact that:

a) the government assumes the technical responsibility and sponsorship;

b) the accessibility of the media to the broad masses of people; and

c) the people's willingness to learn.

Today, radio and television are used more for education than for entertainment because programs on the air during the day are entirely devoted to educational activities while entertainment programs are available only in the evenings. Perhaps, radio and television are the most successful means of distance education for adult learners in terms of scale and impact in China.

(4) Distance Education Through Satellite Transmission

The use of satellite communication in distance education was "prompted by a desire to reduce the costs while increasing the quality and outreach of education.... The problems associated with delivering information over distances to scattered population ... made satellite communication a particularly inviting option ... a special form of adult education involving the transfer and exchange of knowledge, techniques, and technology between the university and the community ... would be the main content of the telecast." (26)

The technology of satellite transmission for the purpose of distance education has a very short history in China. A communication satellite was launched into synchronous orbit in 1986 (27). It has one station devoted exclusively to education. Today, more than 377 ground receiving stations and 936 sub-stations have been set up in different places of the country.

The satellite educational programs are relayed by television stations in more than half of the provinces, autonomous regions and municipalities. It is planned that a satellite education network will be formed by 1992.

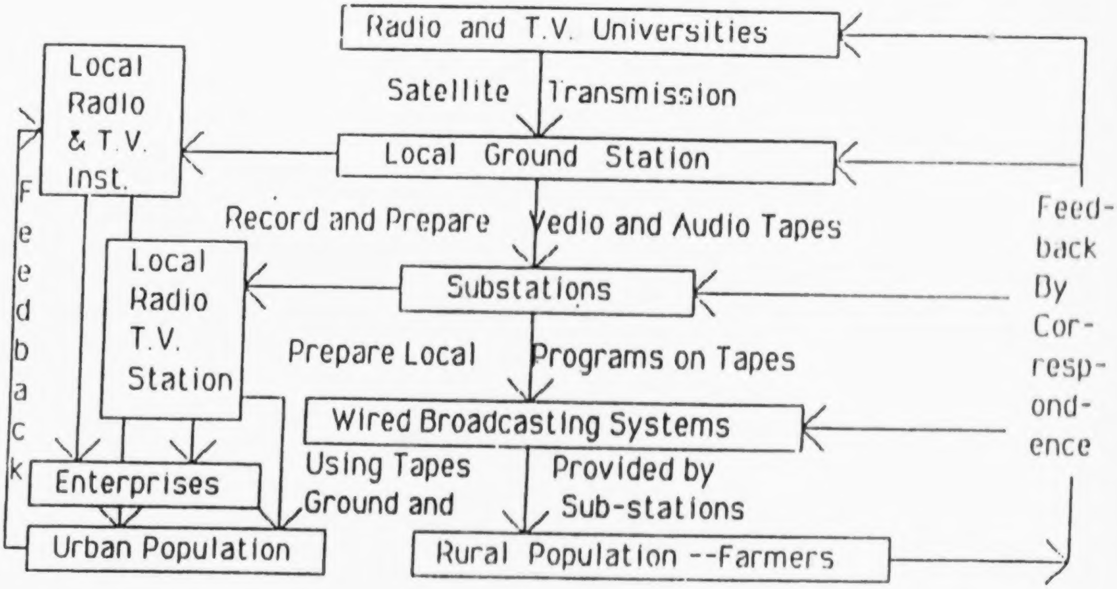
The impact is immediate and enormous. The technology has provided a solution to the urgent problem of training primary and secondary school teachers. In 1986 alone, more than 500,000 people participated in satellite training programs. As a result, within a year, the recruitment of primary and secondary school teachers increased by 280,000 (28).

Satellite programs concentrate on such diverse subjects as national integration, upgrading and expanding education, health, nutrition, population, management and agriculture (29).

4. Perspectives on Future Chinese Distance Education

The Chinese people are more enthusiastic and optimistic about the future prospects of distance education, because they have so far benefited tremendously. Distance education is unquestionably powerful and, to control it, we must try to understand the multitude of ways in which it affects our daily lives (30).

At the same time, the Wired Broadcasting System, Radio and Television Universities, and Satellite Educational Programs will definitely continue to develop and flourish. The possible trend for the Chinese distance education in the foreseeable future is the well-balanced and logically arranged combination of different media providing education programs that people and the nation need. It seems highly possible that a nationwide distance educational network using satellite, radio, television, video, audio and broadcasting technology will be established in the next five to ten years (See the following chart) (31).


Radio and T.V. Universities
Local Radio & T.V. Inst.
Satellite Transmission
Local Ground Station
Feedback
Record and Prepare Vedio and Audio Tapes
Local Radio T.V. Station
Substations
Feed-back By Cor-resp-ond-ence
Prepare Local Programs on Tapes
Wired Broadcasting Systems
Enterprises
Using Tapes Ground and Provided by Sub-stations
Urban Population
Rural Population --Farmers

Apart from the future improvement in the present distance educational system, China also plans to build UHF educational transmission stations in nine cities and set up eighty five study centers, with the help of loans extended by the World Bank for promoting the present distance educational systems (31).

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A PERSPECTIVE OF THE DEVELOPMENT OF CAREER COUNSELING IN SCHOOL SYSTEMS IN THE PEOPLE'S REPUBLIC OF CHINA

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INTRODUCTION

Theories and professional practices in counseling are lacking in the People's Republic of China. In this ancient country with thousands of years of tradition and culture, the principal vehicles for counseling are the neighborhood council and the extended family (Brammer 1985). However, under the current socialist system, all those in leadership positions, be they public officials, employee supervisors, or school teachers, offer advice and counsel to workers and students for dealing with their problems including family difficulties. However, the Chinese society is currently undergoing rapid economic and social reforms and many of the traditional systems and institutions are ineffective in meeting the new needs and demands. Many reforms are underway or are being considered. For example, the system for selecting and placing all levels of workers has been moving away from the rigid national manpower planning and state allocation of employment to a more flexible system of temporary contract labor. The process, from my point of view, of the employer-employee interaction has become much more complicated. As a necessity, vocational education is developing rapidly to offer students a wide variety of training programs. Informal counseling by leaders, family, or neighborhood councils is no longer satisfactory to either workers or students. There is a growing need for the development of professional counseling and vocational guidance in the school system, community and work place. Nevertheless, this need is not yet widely recognized by the government.

Unlike in the U.S.A., provision of professional assistance is only now becoming accepted in China. This paper describes the necessary requirements for the development of career counseling services in the school system in the People's Republic of China. An attempt is made to answer two questions: (1) Can the idea of career counseling be accepted by the Chinese social system; (2) What are the needs for the development of career counseling and vocational guidance services in schools while vocational education is being speedily developed. The data base for these cross-cultural comprehensive diagnostics and predictions includes the literature review from several disciplines and direct observations during a visit to China in 1987.

THE REFORM OF THE EMPLOYMENT SYSTEM IN CHINA

If we were to step back from the 1980's to the 1970's, we would see that the slogan, "Do whatever the Party wants me to do, go wherever the country needs me", was very popular, and the principle implied in the slogan influenced job assignment of graduates. Both teachers and students were concerned and apprehensive about this crucial decision. Students were afraid of being assigned to jobs which they did not want. Teachers worried that students would not accept the jobs they assigned to them. In supporting this employment system, schools encouraged every student to "place his/her whole life at the disposal of the Party".

The idea of distributing jobs by the central government and the Party was originated during the period of revolution before 1949. During World War II, the first common objective for the Chinese Communist Party was to drive out the invading Japanese army and to establish an independent and socialistic country. To fulfil this goal, large numbers of people gave up their own careers and jobs and devoted themselves to the course of China's revolution. However, the practice was continued after the revolution when the new social system was established and the country tried to achieve economic development.

After the 1949 Revolution, under the leadership of the centralized Party, the government continued to call on people to obey their demands regardless of the people's preferences. The government established a permanent employment system under which the selection and privation of employee in any enterprise or agency were basically decided by the State Planning Committee. People were assigned to jobs when they graduated from school or college. Everyone was assured of a job, but once an individual was placed in a position, he might not be able to easily change it. The permanent employment is considered government employment, in contrast with a system of contract labor or self-employment. The government workers can get free health insurance and care, and other benefits. They usually receive eighty percent of their salary after they retire. Contract laborers and self-employees, on the other hand, do not enjoy as good welfare benefits as do government employees.

This employment system as practiced has increasingly manifested critical problems. First, industries and office employers lack authority in selecting the people they need, because their employees are assigned to them by schools or colleges. Moreover, unneeded workers can not be dismissed. The condition has become known as the

"Socialist Iron Rice Bowl". Employees are thus protected from the fear of losing jobs. However, employers find it difficult to revise the employee structure according to the production needs. It is not surprising to hear, therefore, that in some industries workers and staff do not work because there are more hands than needed, while other places might have shortages of manpower. For example, the coal industry ministry complained that about fifty percent of their new employees in the last few years were female. In some places female employees reached 70%. This condition has created a serious shortage of coal miners, there are often more workers in offices and services than actually needed since women are not allowed work as miners (Hu,Q.L. 1986). Consequently, the present employment system hampers work efficiency and economic development. Particularly following the "Cultural Revolution", there was a temporary internal employment policy which gave families of workers and employees the priority in employment. Thus children frequently take their parents' places in the work place. This policy did not encourage students to pursue more education and vocational training. Consequently, unqualified employees increased considerably. Under these circumstances, factories and agencies found it necessary to set up their own programs for training new employees and young workers.

The other disadvantage of the Chinese employment system is that individuals do not have the rights and options to choose what they want to do. It is quite common that people work in fields for which they are not prepared academically. Their abilities, talents, skills knowledge and interests are not brought into full play in their jobs. Consequently, workers and staff members often do not become actively and creatively involved in their work and production. Workers must accept their assignments, regardless of their own interests and abilities.

The technological revolution taking place in the world presents an opportunity and a challenge to the modernization of China. The country is fighting a great battle to determine if it can build a technological and affluent society in which many of the traditional values, social relationship, systems and institutions can be preserved. The strategy the government is resorting to is the economic reform. The purpose is to change the system adopted from the Soviet Union to a new one which will better represent China's situation and culture. There has to be employment reform to correspond with the new economic system. Also the government is aware that equalitarianism and the lifelong guarantee of jobs would not encourage healthy competition which could facilitate economic growth. Equalitarianism and the lifelong guarantee of jobs do not motivate either the productive force nor the initiative of the masses, nor do they represent the characteristics of what a socialistic employment system should be.

A remarkable change is taking place in the employment system reform. In order to improve the current employment system, the State Council issued in 1986 a document of "Four Decisions": (1) the adoption of the contract employment system and the policy of permitting employers to select their own employees instead of using the select employee system and the "internal hiring" policy; (2) the establishment of an insurance system for workers who lose jobs or are looking for other positions, the establishment of retirement insurance for contract employees since their retirement pension is not as high as that of permanent employees; (3) the development of occupational placement and vocational training; and (4) the responsibility of firing those employees who violate the required disciplines and regulations. These major initiatives, as Horsley said (1988), break the so-called "iron rice bowl" of guaranteed lifetime employment at Chinese enterprises and reinforce and complement innovations in the labor system.

There are major problems in the implementation of these polices. For example, some leaders and part of the population are not in favor of the new system. They do not want to lose the security of the old system, both for themselves and for their children. Therefore, there have been cases where employment contracts were made not for a year or two as intended under the new policy, but for 30 or even 40 years. A senior Chinese industrial official recently complained that "sacking a worker is harder than going to heaven (Horsley, 1988)." The other difficulty is that there is no placement institution to assist people to find new jobs, particularly when people are dismissed from their jobs.

Nevertheless, the recent labor force reform has highlighted the need for the development of counseling services to assist individuals in finding vocations which will best employ their interests and abilities, to the benefits of themselves as well as the society. As a result of these changes in the employment policies, there is a great need in China for institutionalization of vocational guidance and career counseling.

EXPANSION AND PROBLEMS OF TECHNICAL EDUCATION AND VOCATIONAL TRAINING

Since 1976, the Chinese leadership has been pursuing a new set of goals, known as the Four Modernizations - modernization in agriculture, industry, national defense, and science and technology - as a strategy for development. Education was recognized as the basis for economic growth. This is a remarkable value change in the Chinese educational history since China had uptill then seen education as consumption rather than investment. The training of cultured and technically competent young men and women for building a modernized society has been reaffirmed as the primary objective of education, instead of the earlier emphasis on bringing up "successors to the revolution" to the exclusion of other considerations, (Hu,C.T., 1981). The development of vocational education is one aspect of the movement toward modernization, since most occupations, including most of semi-skilled jobs, will require educational preparation in terms of skills and technical knowledge.

The expansion of vocational education has been two-dimensional. First, it has grown in quantity as seen in the number of vocational schools and enrollment pattern. Although China has a long and rich educational history, vocational education had not been emphasized for a long time and schools were developed mainly along academic lines to prepare students for the officialdom. After 1949, vocational education emerged as a formal part of the educational system to train students in basic technical and vocational skills. By 1965, right before the Cultural Revolution, technical and vocational schools increased to 1,265 with 2,215,869 students, from 1,171 with 208,845 students in 1949 (China Education Year Book, 1984). During the so called "Great Leap Forward" (1958), the country wanted to move ahead rapidly and the number of vocational schools increased to 6,225. This expansion overwhelmed the state's ability to prepare school teachers and provide facilities. As a result, vocational education was, by and large, of low quality. During the Cultural Revolution (1966-1976), internal turmoil seriously disrupted the functioning of, and inflicted heavy losses on, the educational enterprise. Vocational education was criticized by many educators and parents as part of an unfair double-track system under which students in academic schools were to become "intellectual aristocrats" (white color workers) while those in vocational and technical school were trained to be manual workers (blue color workers). As a result, vocational schools were largely dissolved. The teachers also suffered immensely; a large number of school buildings were occupied for other use, and heavy losses were inflicted on laboratory equipment and apparatus and on library holdings. According to the national statistics, there were only 36,471 students left in vocational and technical schools in 1969.

It took about ten years to straighten things out in every field of education after the Cultural Revolution. The structure of secondary education had to be adjusted. Many vocational schools were restored and new programs were established. In 1980, the National People's

Conference issued a "Summary of the National Vocational Education Conference". This document evaluated the development of vocational education since 1949 and reaffirmed the earlier goal, the function and tasks of vocational education. The document also called for the reestablishment and expansion of vocational schools and various vocational programs. Since then vocational education in China has entered a "new era". The national statistics for vocational education which includes technical schools, agricultural schools, and vocational training in high schools showed an increase of more than four times in enrollment from 1980 to 1985. There were 8,070 vocational schools with 2,295,700 students (*Achievement of education in China, 1986*), and this was the peak of vocational education development that had ever occurred.

In May 1985, the Central Committee of the Communist Party of China held a national education conference, at which a decision was made to further reform the educational structure. It was recognized that to achieve modernization and to develop productive forces, continuous upgrading of educational programs in secondary schools would be required, particularly the proficiency of vocational and technical skills. The document issued after the conference pointed out, "Our socialist modernization requires not only senior scientific and technical experts but also, and urgently, millions of intermediate and junior engineers, managerial personnel and technicians who have received adequate vocational and technical education, as well as urban and rural workers who are well trained vocationally. Without a huge contingent of such workers and engineers, advanced sciences and technologies and sophisticated equipment cannot be translated into productive forces." One step the committee made to enhance vocational education as well as to motivate the labor system reform was the decision stated in the document that " from now on all units must, first of all, employ graduates from vocational and technical schools. No one, particularly those to be engaged in highly specialized and technical work, shall be allowed to take up the job unless he has received his qualification certificate." This is the powerful impetus to the significant expansion of vocational education.

Since that conference, the development of vocational education has received attention both from the government and educators. According to the statistics from the State Education Commission, the number of vocational school students reached 4.5 million by 1987, accounting for 43 percent of the country's total high school enrollment (China Daily, April 15, 1987). This is in contrast with 1978, when only 7.6 percent of the students were in vocational training (*Chinese Education Year Book, 1984*).

There are three types of schools which prepare students for the world of work. They are vocational training, technical and agricultural education. Technical education may start at either the junior or senior high school level. The junior high school level technical education trains junior technicians while the senior high school level produces skilled technical laborers. These are mostly educational programs sponsored and financed by factories and companies to train youngsters to master basic technical skills.

Vocational training emerged only in the last ten years, but has mushroomed rapidly. Such programs are offered mostly in high school, training for non-technical, service-type industries. The programs are designed for senior high school students who usually do not go on to higher education. Businesses and agencies show a great deal of interest and initiative in cooperating with these high schools. Their participation includes providing equipment for training, sending skillful professionals to aid classroom teaching, and helping fund the programs. This assistance fosters the development of vocational education.

Agricultural high schools are mostly for the purpose of educating young people to work on farms in local communities. They are local initiatives, locally financed and, therefore, recruitment and job allocation take place within the locality. After graduation, students will return to the communes and production brigades to contribute their part in modernizing agriculture. This provides peasants with the opportunity to manipulate their own manpower supply (Cheng Kai Ming, 1986).

A second expansion of vocational education is that a wider range of programs has been provided in recent years. A reissued program list of vocational education schools by the State Education Commission (1980) included eight categories with 348 majors. There are 242 majors in engineering; 25 in agriculture; 11 in forestry; 12 in teacher education; 35 in business; 1 in athletics and 20 in arts and crafts. Under the force of current social economic development, those fields such as hotel service, travel service, business and foreign trade urgently call for skilled workers. A large number of such programs are being established and added to vocational training.

Although various vocational programs provide wide-ranging options for students to choose what they want to do, students have few chances to explore the world of work and know little about their vocational interests and talents. Consequently, some of them blindly choose their programs of study. Students may select majors hastily, or just do whatever their parents want them to do. But once they get into a certain training program or field, it is very hard or impossible to transfer to other majors.

A survey was done by Hao Hu (1986) on 732 students in 21 vocational classes in Shanghai. The students were asked to indicate their level of satisfaction with their major field of study. The results indicated that there were only 56% of students who identified themselves as being satisfied with their present majors. The percentage of students who wanted to change to other fields was as high as 43%. There were 41% of students who hoped that they could have the opportunities to go to colleges for which their current programs did not usually prepare them. A great percentage of students who major in library science, banking services, foreign trade, textile manufacturing, cooking and catering, hotel services and salesmanship declared they were satisfied. An interesting finding is that there was no one in the major of bricklayer (tiler) who described himself as being satisfied. On the contrary, 80% of them wanted to go into a more satisfying job. There were 50% who wanted to work in offices.

Within the last few years, people in China have been changing their values and attitudes toward social occupations, particularly toward business, because there are large financial opportunities which offer a very bright future. Traditionally, officials had highly respected social positions, while businessmen were looked down upon. Now the tendency is to accept the principle that "money talks". Niu (1988) described the future occupations of youngsters as follows, "The roads for occupation are in three colors - red, yellow and black. The red road refers to a career as a government official, which will guarantee you power; the yellow road leads you to business, where you are well paid; while the black road refers to jobs in a school -including high schools, colleges and universities - or in a research institute, which will lead you nowhere."

This state of affairs is part of the result of "crises of belief" after the Cultural Revolution. It is true that the young generation does not blindly worship Marxism as the previous generation did during the revolution. However, some of them turn to money worship while religion and traditional Chinese beliefs are being criticized and rejected, and new beliefs have not been established. For most students, they have become more confused about what is right, what is wrong, and what their lives are for. Under these circumstances, one thing that needs to be done is to guide young people, particularly high school students, in the exploration of themselves and their values, of who they are, what they want from their life, what they want to do, who they want to be, and what is the reality of their opportunities. A Chinese mind used to believe that the political system combined with the right thinking and hard work would lead to a good life (Brammer, 1985). But, after the Cultural Revolution, all values are reevaluated.

Also, for more than ninety percent of the youngsters in China, high school is the last chance for a full time education. It is time to encourage the youth to make wise occupational choices and to participate in relevant job-training programs (Rhode 1970). If there is career counseling and vocational guidance program available to meet the new generation's needs, students will be able to design their own careers more systematically and realistically to achieve their work objectives and life goals.

THE SUGGESTIONS FOR THE DEVELOPMENT OF CAREER COUNSELING AND VOCATIONAL GUIDANCE PROGRAM IN CHINESE SCHOOL SYSTEM

The social function of school education has been strongly recognized as the preparation of labor force for the construction and achievement of modernization, while the function of school for the individual is believed to fulfill youngsters' need to develop in an all-round way - morally, intellectually and physically. To play this dual role, schools must, based on the economic and social development of the society, prepare students for a world of work with not only knowledge and skills, but also positive attitudes and the ability to adjust to occupations. Therefore, career counseling should be developed as a key component in a school program, comparable to moral education, instruction, physical education and students' extra-curricular activities.

Career counseling and vocational guidance in school should be planned as a process of helping students to achieve self-understanding and knowledge about the world of work, and to improve the skill of decision making. To fulfill this goal, the school counselor and administrator should: (a) be willing to help individuals with their personal growth and to respect individual values, rather than playing an authority role and correcting students' "incorrect" thoughts and behaviors; (b) provide students with a wide variety of information about themselves and their educational, vocational and social opportunities; and (c) offer students the opportunity to receive individual assistance through counseling.

The basic goal of counseling should be to encourage self-discovery and self-development. People in an oriental culture have learned to respect and listen to their parents, teachers and the older generation. They have never had much positive encouragement for what they have done. Instead what they hear continually is "do not be arrogant", "try harder", and "do better". Although most people become modest and self-disciplined, one thing which has been ignored in individual development is the achievement of self-understanding, self-confidence and feeling comfortable with oneself. Therefore, achieving self-discovery and self-development is one of the core tasks of the career counseling program. The non-clash relationship between self-pride and humbleness should be discussed with students .

Counseling should respect students' values and beliefs and assist students in exploring their goals in life. One of the well known Confucius quotations which was specified in the ethical code in the history of China says, "Ruler guides subject, father guides son, and husband guides wife." In school, of course, teacher guides students. Conformity as one of the crucial principles in the Chinese society has dominated the culture for thousands of years. The Party, the main force in China, calls on its people to keep the leadership and ideology unified with the government. This principle has dampened initiatives in students. To counsel students on career exploration and self-exploration, it must be understood by counselors as well as school administrators that every student has his freedom and the to choose his own set of beliefs and behavioral patterns. Assistance should be given to help students understand their behavior and to facilitate changes.

Counseling should be a cooperative enterprise involving students, parents, teachers, administrators and counselors. According to the school system in China, all pupils are assigned to classes and grades. Generally speaking, a class is made of about 40-50 students who take all of their courses together. The class is the basic educational and social unit at all levels - elementary through university. The master teacher of a class, who also teaches a subject, has the responsibility of assisting his or her students with their problems. Therefore, master teachers usually have frequent contacts with students. They are the major resource for students to obtain help, and for counselors to get information about students' needs and problems. But, these teachers do not have professional training. Instead, they work with students according to their own practical experiences and individual interests as well as their own values. Professional counselors in schools should be the ones who have the major responsibility for providing vocational guidance and career counseling. They should closely cooperate with teachers and give guidance to master teacher, too.

Counselors should maintain effective communication with parents, who play an important role in students' career decision making. In order to effectively guide students with their vocational choices, counselors need to work with parents and help them to understand their children's rights and behavior patterns and to respect their values.

A counselor in a school system should be given an administrative position under the principal, comparable with that of a director who is responsible for student behavior and ethics. This would help the principal diagnose and improve teachers' instruction and make principal's own leadership more efficient. Because the term, counseling, is interpreted as psychological consulting in mainland China, contrasted with its being considered tutoring in Taiwan, counselors could be named directors of psychological consulting.

The counselor should be professionally trained. Counselors who work in schools as professional staff should have teaching experience and meet adequate standards of preparation or training. Teachers' colleges and normal universities are being urged to set up counselor education programs to fulfill these requirements. There are some missing links in teachers' training and school practices. Students' personal problems and students' services are not being fully discussed in Chinese pedagogy, which is a major subject in teacher training. Psychologists are doing their research in their laboratories or offices instead of going to schools to assist teachers as well as students. About 85% of the graduate students in the Department of Education in Beijing Normal University have not had teaching experiences nor experience working with children, because they enter the graduate program immediately after completion of undergraduate studies. Establishing the counselor education program would, hopefully, help to resolve this problem.

In summary, technological forces, social reforms and economic development all point toward increased needs for reform in the employment system and development of vocational education. All this indicates that effective participation in a modern society demands the establishment of career counseling and vocational guidance programs in the high school system. Now is the feasible time to establish such programs in the People's Republic of China.

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WOMEN'S EDUCATION IN THE PEOPLE'S REPUBLIC OF CHINA: PROGRESS AND CONTRADICTIONS IN REVOLUTION AND IN MODERNIZATION

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Chinese women have for many centuries been assigned an inferior status. Any significant attempt to change women's conditions on a national scale was realized only after the communist liberation of China in 1949. It is generally believed that since then Chinese men and women have been enjoying equality on almost all fronts, at least on paper. How has constitutional equality between the two sexes been interpreted? What kind of equality and how much of it do Chinese women enjoy? If full equality is not a reality yet, what else needs to be done? In this paper I will first look at women's participation in schooling in today's China and examine the causes behind it. In the second half of the paper, I will trace how education has changed women's roles in the private sphere of the household and the public spheres of the economy and politics. I will argue that, in spite of increased opportunities, Chinese women still experience discrimination in education, and that while education has brought women unprecedented participation and status in the workforce, it alone has not been able to bring about favorable forces in women's equality with men. Traditional attitudes are still omnipresent, though less blatant, even four decades after a major political transformation in the country, an honest effort toward gender equality has to be made not only in policy formulation but also in implementation.

WOMEN AND EDUCATION IN CHINA TODAY

Reforms Affecting Women's Education

In traditional China knowledge performed opposite functions depending on one's gender. The Chinese respect for education was true of male China only. Women were deprived of education. Education for women, if any, was to train them to be good wives and mothers (1). Organized education for girls did not appear until the nineteenth century as a result of Christian missionary effort (2). The inclusion of girls in government schools came later. The Qing (1644 1911) government developed a modern school system in 1902. It issued an edict in 1907 opening teacher training schools and primary schools for girls (3). In the next four decades, educational opportunities were expanded for girls, but girls lagged far behind boys in enrollment (4).

At the founding of the People's Republic of China, one of the goals of the Communist government was to liberate women from the centuries old oppression by men. In September 1949, the "Common Program of the Chinese People's Political Consultative Conference" was adopted. It was the precedent of the official constitution adopted in 1954. Article 6, Chapter I of the Common Program stated that "The People's Republic of China abolishes the feudal system which holds women in bondage. Women shall enjoy equal rights with men in political, economic, cultural and educational and social life. Freedom of marriage for men and women shall be enforced" (5). Other than that no specific policy was issued on educating girls.

Almost four decades has passed since 1949. During this period, Chinese education has gone through tremendous change.

Development of and Obstacles to Women's Participation in Education

The changes in education since the Revolution did not directly address inequality in women's access to education, although they did affect it. In general, there has been remarkable expansion in education since the 1950s. In 1952, 49.2 percent of the primary school aged children were in school. In 1965 it went up to 84.7 percent, and by 1975, it reached 95 percent. Thereafter the percentage has been more or less stable (6). Other statistics illustrate the post revolutionary expansion. In 1952, the total enrollment at all levels of education made up 9.47 percent of the total Chinese population. By 1965, it had doubled to 18.09 percent. Although the percentages had fluctuated since then, they in general remained in the neighborhood of 18 percent (7). Women benefited from this expansion. Table 1 shows that the percentages of females versus males at all levels of education have been increasing. In the primary school, females made up only 28 percent of the total enrollments in 1951; they were 44.8 percent by 1985. In secondary education, female enrollment also rose from some 26 percent to around 40 percent. In tertiary education, the growth is less impressive, from slightly over 20 percent in the beginning of the 1950s to close to 30 percent in 1985. The higher the level, the less represented females are. Clearly equalization of education for girls is less elusive at the lower end of the educational hierarchy. _d _ Educational provision becomes scarcer at the higher end and more men than women attend.

Great gains have been achieved for women if the present is compared with the past. Table 2 shows that the ratios of males and females who have received primary education or above by 1982 ranged from some 117:100 to 127:100 among those aged 10 to 29. This is the generation born after 1949. The contrast with those born and raised before 1949 is astounding. In the age 45 to 60 and above groups, the ratios range from about 300:100 to 754:100.

In spite of the improvement in educational provision for women, bias against them remains. Policies issued by the central government do not always reach all rural areas. The discrepancies between central government policy and local practice are best demonstrated by the violation against the one child policy and the existence in some rural area of teenage marriage (which is illegal as the minimum legal marriage as of 1980 was 22 for men and 20 for women). In education a similar problem exists. While the state government declares equal rights of boys and girls to education, many peasant families send sons to school and keep daughters at home. Many rural parents still believe as their ancestors did that "daughters will be married out of the family, just like water poured out." Sending daughters to school may mean earnings foregone for rural parents as girls who stay at home can help with housework, herding domestic animals and looking after younger siblings. In a letter to the editor of the *Renmin ribao (People's Daily)* in 1985, a New China News Agency reporter pointed out that 3.5 million school-aged girls across China were still kept out of school, especially those in remote regions with minority groups (8). Even if girls are enrolled at school, they are more likely to drop out than boys (9). A commune in Fujian Province is an illustration. In 1976 out of the 1,000 or so school aged girls there, about 80 percent went to primary school, but only about 400 got to the end of it by 1981 (10). The attrition rate was as high as 50 percent. e Economic reform has indirectly had a regressive effect on girls' schooling in parts of China's countryside. In recent years the rural responsibility system has been introduced to rural areas whereby households sign contracts with the collective to turn over a certain amount of production to the collective but can keep the surplus to sell to state or private market. Sideline production is encouraged (11). The new system aims at raising peasants' incentive in agricultural production. Because peasant parents work harder than before, many transfer farm work to their children, especially daughters, so that rural enrollment in some areas has further dropped (12).

Residence in rural areas further cuts across gender to reduce a girl's access to education at the secondary level. The female enrollment rate in lower secondary schools in villages is 36.5 percent and in higher secondary 31.1 percent (13). These are aggregated rates, in some cases there are entire schools without female students.

There is greater access to education for girls in the urban than rural areas. The urban population has been more receptive to new ideas, including social movements that aim at improvement of women's situation (14). However, the problem exists in cities, although its expression and extent vary with geographical setting. Schools set higher admission scores for female applicants than for male ones for the same academic program, especially when the program is in great demand. The prestigious keypoint schools, which are allocated more resources and select teachers, provide an example of sex bias in the cities. A letter to the editor of Guangming ribao points out that in order to enter a keypoint secondary school in Tianjin, girls have to have a higher score (15). The reason given is that girls usually perform better than boys at primary and early secondary school. School administrators have decided that if they fail to intervene, more girls will be admitted to keypoint schools (16). The writer of this letter pointed out that keypoint school administrators believe that if they admit too many girls, their ability to get students into colleges and universities will be undermined. Embedded is the belief that girls' ability relative to boys' declines with age and that it is "due to biological reasons" rather than a combined result of socialization, great responsibilities for girls in the household, and lower parent and teacher expectations. Some secondary technical schools and vocational schools also raise the admission scores for girls in order to maintain boys' enrollment level (17).

Although more females are admitted to secondary schools relative to males, when it comes to more prestigious schools females are discouraged in one way or another, as witnessed by the Tianjin case. Women have also been discouraged in the work place and the Communist Party. This will be discussed in greater detail later in this paper. Here, the focus is on measures taken to enhance the articulation between work and school, given that work units (units of organizations, e.g., administrative departments, factories, hospitals, and schools) have been unwilling to recruit female school leavers. The All China Women's Federation, a national umbrella organization that promotes women's rights, has established special vocational schools for girls (18). Thirteen such women's vocational schools and three women's vocational universities had been established as of 1986 (19). Specifically set up to tap female human resources, these schools usually offer programs "that are suitable for females" such as clerical and secretarial skills, early childhood care and tourist services. The response to these schools has been positive and they are believed to be a partial solution to work place sex discrimination. However, they do not confront the problem of inequality in female access to technical, vocational and higher education. They prepare girl students for the type of work believed to suit their aptitudes and abilities. The emergence of such girls' vocational programs perpetuates the assumption that sex segregation in occupation makes sense. New vocational schools for girls also reverse the trend to provide coeducation. By 1970 the last girls only schools were phased out (20). In the 1980s, under the guise of safeguarding women's employment, single sex schools are again on the rise.

At the tertiary level, many institutes recruit few female students. Although the data in table 1 shows that the percentage of female relative to male students is increasing, many Chinese publications see a regressive trend. Zhongguo funubao (Women of China Newspaper), for example, has reported a proportional drop in female enrollment in some colleges and universities (21). In the case of graduate students, the percentage of women has been rising but remains disproportionally low.

What are the variables that cut across gender in determining women's educational opportunity? The Marxist notion of class difference whereby the ruling class controls the means of production is no longer an effective explanation in a country where social class stratification has officially been denounced. In China, as in other developing nations, geographical location is a major determinant of life chances. Girls residing in cities are more likely than their rural counterparts to be educated, but even within cities there is a hierarchy. Children of cadres and intellectuals have greater educational opportunity than do children of workers. This holds also for children from better off peasant families or those who reside in villages near urban settlement. While there are exceptions, most Chinese parents are more willing to invest in sons' than daughters' education. Families that cannot afford education for all their children often give priority to sons. Better off families can and may be more willing to send daughters to school as well. More female students than male ones tend to have come from wealthier and/or more educated families especially at the secondary and tertiary levels.

China is a multiethnic country. Apart from the Han who comprise 93.4 percent of the population, there are 56 named minority groups (called the nationalities) which comprise 6.6 percent of her population (22). The nationalities are scattered in pastoral areas, mountainous and/or remote regions along the land border. All nationalities in China have equal constitutional rights and duties (23). The expansion in educational provision for them since the Communist revolution has been impressive. In 1951 the total enrollment of nationalities was 0.99 million. By 1978 it had soared to 10.24 million, a more than tenfold increase (24). Despite this, primary education is far from universal. In some regions only 20 to 30 percent of school aged children are in school (25). The enrollment of girls is lower than that of boys. For example, most Muslim girls in Ningxia are kept at home (26). Reports focusing on the Salar (27) and other nationalities paint a similar picture (28).

As elsewhere, nonformal education in China is a loose term that includes all types of education outside formal schooling. In the 1950s, great emphasis was placed on literacy classes. These classes taught about the new people's government, family hygiene and basic reading skills. The literacy classes were directed primarily at women since about 90 percent of the illiterates before 1949 were female (29). In the countryside literacy classes were held in the winter months when agricultural work was slow. These were called "winter studies." In the cities, classes were organized for housewives, factory workers and other poor female laborers. While literary classes reached large numbers of women denied formal schooling, today about 70 percent of the illiterates in China are women (30). Among rural women aged 20 or so, about a third are illiterate or semi illiterate (31). Data on participation by sex in other nonformal education programs are hard to obtain. Female participation rate in in-service training programs for workers is estimated at about 30 percent of the total (32).

WOMEN'S EDUCATION AND THEIR PARTICIPATION AND STATUS IN THE WORKFORCE

In China the strongest determinant of women's entry to the workforce is probably economic policy, not education. Some scholars argue that women have served as a reserve labor force. When the economic policy demands more labor than can be supplied by men, women enter the labor market. The Great Leap Forward mobilized women to the field and factories (33). In times of surplus labor, women have been thrown out of work first. A second class status has been attached to the female labor force. Attitudes of work unit administrators against recruiting women workers do not always translate into practice, thanks to government imposed ratios of women employed in state industries. This section of the paper focuses on how this policy works and how sex discrimination remains in spite of government regulations and women's educational attainment.

Distribution of Women in the Workforce

Table 3 provides statistics on the sex composition of the workforce. In 1982, the workforce participation rate was 81.7 percent for women and 91 percent for men (34). Of those gainfully employed, 56.31 percent were male and 43.69 percent female. 73.66 percent of the labor force worked in agriculture, stock farming, forestry and fishing; 11.74 percent in manufacturing; 2.97 percent in wholesale/retail trade, restaurants, hotels and storage; and 2.37 percent in educational and cultural services. Women's employment roughly coincided with that of the labor force as a whole: 77.97 percent worked in agriculture, stock farming, forestry and fishing; 11.94 percent in manufacturing; 2.94 percent in wholesale/retail trade, restaurant, hotels and storage; and 1.92 percent in educational and cultural services. Approximately 80 percent of those employed in national organizations, Communist Party and political groups were men and about 20 percent were female. While women may participate almost equally with men numerically in manufacturing, their participation is directly an effect of government regulations that the workforce in heavy industries should be 60 percent male and 40 percent female and that in light industries the labor force should be 60 percent female and 40 percent male (35).

However, a phenomenon has emerged in recent years which may discourage women's participation in the workforce. Even if they possess the same educational qualifications as men, female job applicants are often turned down by employers. The reason employers provide is that female workers affect factory production as they may require maternity leave and are not usually available for overtime work since they have household obligations. Although educational provision has equipped more women for work, employers who are predominantly male assume that their reproductive and domestic roles prevent them from being competitive with men who do not have the same dilemma between family and work. Another reason employers give for not recruiting women is related to bonus for the one child working mother. In order to check population growth, the government rewards the working woman who follows the one child policy by paying her a bonus through her work unit that operates under a system of ownership by the whole people, i.e., by the state government. The state government does not issue such a bonus through work units that operate under collective ownership, i.e., those at regional levels. And work units of this kind may or may not issue bonus to the one child mother. Many work units that operate under collective ownership are reluctant to hire women because they fear more female workers will cost more.

While education qualifications alone are not enough to enable women to compete in the urban labor force on an equal footing with men, the lack of education has made rural women lag further behind men. Even when women and men do the same work, women are paid only about 70 percent of what men earn (36). Although complete data on how the Four Modernizations interact with education to change the pattern of women's participation in agricultural production is lacking, a report by a journalist in the Renmin ribao suggests an emerging phenomenon that may hold true for other Chinese villages. In visits to villages in recent years the journalist observed that fewer and fewer men work in the fields while the ratio of women is rising (37). Production brigades draw men from villages to help develop village industries and sideline undertakings. With less education, women appear to be left behind to do simple manual work.

Education may or may not facilitate women's entry to the professions. Women are already underrepresented in higher education. But possession of educational qualifications does not always guarantee access to relevant jobs. Some colleges and universities acknowledge that female students' performance is the same as male's, yet the male graduates always fare better in getting jobs. It is not uncommon for work units to reject female university graduates (38). Although some institutes of higher education sign contracts with work units to secure jobs for female graduates, these contracts are not always respected. Reasons work units give for not hiring women in spite of educational qualifications are as follows. First, recruiting officers claim that women are not suitable for jobs that require business trips. Second, and this is a more common excuse, they complain that women have too much to do at home, which in turn affects their performance at work and professional growth (39). The demand for university and college graduates at present is 20 times greater than the supply (40), so that despite their unwillingness, work units end up hiring women. But the distrust in women's ability and suitability for the professions must be so deeply rooted that it triumphs over urgent need for human power. Again it shows that education alone is not enough to help women enter the workforce.

Women's Education and Occupational Status

The status of women in the professions also reveals that education has not brought them reward equal to men's. Women are concentrated in the lower ranking positions. In 1984 there were 3.44 million female teachers across the nation, which was 38 percent of the total teaching force. Women made up 94 percent of the early childhood teachers, 39 percent of teachers in primary school, 27.7 percent in general secondary school and 26 percent in institutions of higher education (41). There were 2.396 million female scientific and technological workers in 1984, or 32.1 percent of the total (42). (Scientific and technological workers refer to those in the natural sciences, engineering, agricultural technology, health care, etc.) The average ratio of male and female scientific and technological workers in 1984 was 2.1:1, but the ratio at the rank equivalent to engineer was 4.4:1 and soared up to 7.6:1 at the rank equivalent to senior engineer (43). In the academia across the nation only 5 percent of the full professors and full researchers are female, against 26 percent of females teaching in institutions of higher education (44). The explanation given most frequently is the family. Since it is impossible for husband and wife to manage work and family equally effectively, a common practice among families in which both husband and wife are professionals is to "guarantee (the success of) one out of the two." That is , one shoulders most of the household responsibilities so that the other can concentrate on his/her job. But it is almost always the husband whose success is guaranteed. Because female professionals are believed to yield less, they are not welcome by work units, which in turn gives a reason for schools and universities not to admit them. The vicious cycle goes on. Not surprisingly, in places such as Shanghai 70 to 80 percent of the waiting for employment youth are female (45).

WOMEN'S EDUCATION, MARRIAGE AND THE FAMILY

Education and Marriage Prospect

Success in education and work which increases a man's worth as a potential husband may work just the opposite for women. Traditionally a "suitable" marriage means that the husband should be older and better educated than the wife. This explains why "overaged" single women are becoming a social phenomenon in the cities. The same problem does not exist in the countryside as most women there are less educated than men and therefore not a threat to them. Many of the unmarried urban women are graduate students, university teachers, technological workers, journalists and cadres (46). In 1984, of the unmarried women aged 28 36 registered with a match-making center in Beijing, 34.7 percent had received higher education (47).

Education and Fertility

In China, education, occupation and geographical location all affect fertility. We only look at education here although the three are interrelated. Women with more education tend to have fewer children than those with less education. Data on women aged 50 by 1982, a generation whose childbearing span coincides with the Communist revolution, show that among this cohort the illiterates had an average of 5.86 children, those with primary education had 4.8, those with lower secondary education had 3.74, those with higher secondary education had 2.85 and those with tertiary education had 2.05 children (48).

Education and Housework

Education does not seem to have changed the traditional distribution of housework for women significantly. Often female workers and professionals are not promoted at a rate equal to men. Although husbands help out especially in educated families, wives remain the main persons responsible for domestic chores. There are reports of husbands doing significant amount of housework (49). Unfortunately there are more on how housework prevents women from climbing up the occupational ladder.

WOMEN'S EDUCATION AND POLITICAL PARTICIPATION

The Chinese political structure is predominantly male. The representation of women in the National People's Congress has been weak. Although it has risen from 12 percent of the total in the 1950s to 21.2 percent in 1983 (or 632 out of 2,978 representatives), the final figure we have is still disproportionally low (50). In the Chinese politburo that resulted from the latest (13th) Party Congress, there is no female representation (51). Also, women in the political leadership are often assigned secondary roles (52). The common explanation for it is women's low level of educational attainment. Articles abound in the press urging women to raise their educational standard. Since traditionally women have benefited less from education than men, education may be a reason for women's weakness in the political structure. However, there have also been voices in the press pointing out the sex discrimination in recruiting and promoting cadres. Numerous articles cited in this paper in regard to discrimination against women in admission to school and recruitment to work units also mention a similar problem in recruiting cadres. In provincial political structure, women's presence is dismal. For example, only 4.7 percent of the cadres in provincial bureaus and departments in Hebei are female (53), the corresponding figure for Guangdong province is 4.6 percent (54). We do not have data on the educational attainment of cadres in general, but it is often criticized for being low. It is not just a female cadres' problem. Therefore, it is likely that other factors are at work that bring down the number of female cadres in China.

FUTURE TRENDS

China is constantly changing in the course of her pursuit for a better and more efficient society. The current period is characterized by the four modernizations campaign. Coupled with this is the reform of the economic structure, which includes opening up Chinese ports and cities for trade and joint ventures with foreign business. In general, the four modernizations have mixed impact on women and their education, workforce participation and family responsibilities. In the work force, there have been expanded opportunities for female workers. The current emphasis is on the development of manufacturing industries with foreign capital. More and more capital is being introduced to China. A large labor force is required. It is generally believed that women, with their nimble fingers, are more suitable than men for work in light industries. Expanded opportunities perhaps benefit young women the most. When the cities cannot meet the demand for labor, young women from nearby villages are recruited. In some Chinese towns near Hong Kong, female workers, many from villages, make up high percentages of the factory employees. Many of them live in single women workers' quarters. Moreover, not only are industries becoming more diversified, the rise of tertiary industries is particularly favorable to women (55). These refer to occupations in restauranteering, tourism, transport and communications, wholesale and retail trade, education and commerce. Another new channel for women came with the government's effort to mobilize the people's initiative to raise economic productivity in the form of self-employment. Individual operation in the form of small business or agricultural production has mushroomed. It is believed that the flexibility in individual operation suits women since they can look after their family while carrying on economic activities at or near their homes (56). In farming, there has been an attempt to introduce technology to raise the agricultural yield. Farming is becoming more feminine than before. As increasing numbers of men have left their villages to become small traders or workers in building construction and transport in the cities. Women with children are left at home. Many of them are involved in food crop growing and stock farming. In Kaiping County, Guangdong Province, the ratio of men to women in farming is 1:6.4 and it is said to be a rather common phenomenon in Guangdong (57). Unmarried women can be mobile like men, whereas women with children have to stay put and seek new or improved channels of wage earning near their homes. This situation is likely to continue in the future. Also, we must remember that such prosperity is still a privilege of the coastal and southern regions. These regions have a good industrial base and a tradition of trade with foreign countries due to their geographical location. Although farmers and workers in the interior are also given more incentive to produce, it will take many years for the interior to reach the level of the more developed areas in China. Women in remote areas, including minority women, are less directly affected by the four modernizations than those in the south and coastal areas. This is because in the remote areas, men have traditionally been in contact with the outside. Their women have yet to catch up in order to be more involved in economic modernization (58).

In the professions and government service, the impact of the four modernizations on educated women is again mixed. There have been measures to reform the hiring and promotion system. Stress is laid on ability. While this appears to be a fair practice and a number of successful women have emerged, women still experience more difficulty than men in application for jobs and promotion. A new hiring policy that is likely to affect female employment at the upper middle stratum of the occupational hierarchy is an experiment that will be carried out in two years. Graduates from universities will have to look for jobs themselves instead of being placed by the government. This will give employers more autonomy in selecting their staff. However, since many work units already reject women when they recruit, it is very likely that they will have all the more excuse and authority to reject female applicants.

It is often pointed out that women must be better educated to meet the demand for more skilled workers, scientific and technological personnel, and middle and upper management personnel. Chinese leaders have pointed out that women must raise their educational level before they can be equal to men (59). Parents tend to invest as much in sons' as in daughters' education now. This includes sending them to prestigious schools and keeping them in school for more years (60). However, this is an urban phenomenon. The one child policy has been more successful in the cities and since the single child family is becoming more widespread, urban parents tend to invest in the child regardless of gender. On the one hand, there seems to be more demand from parents to have their daughters educated; on the other, these parents have little say over schools' unfair admission policies which discriminate on the basis of gender. As the educational base becomes broadened to include more women, competition will be keener at the upper levels of schools for scarce places in higher and technological education. Unless discriminatory practices are ended, women will lag further behind. Dropping out of primary and secondary schools in rural areas is becoming a serious problem. Children in their early teens leave school to help their parents in agriculture, village industries or trading. Of these child workers, 85 percent are female (61). Village farmers and workers tend to be more attracted by short term monetary gains than long term prospect from village school education. The high percentage of girls among child workers shows once again that if education has any value to rural parents, sons are more likely than daughters to get it. Rural girls will find themselves in a vicious cycle. While the four modernizations call for more educated workers, economic opportunities for their parents have disrupted their schooling probably at an earlier point than before. A form of compensation for those deprived of education, especially females, is nonformal education. There has been a great demand for nonformal education in towns and villages and from men and women. Spare time classes such as evening literacy classes, agricultural technology, and skills classes are extremely popular. In some counties in Guangdong Province, the female participation rates range from 76 to 98 percent (62). This rage for knowledge is likely to continue too.

For working women, an important question to be resolved is housework. There has been much talk about the socialization of housework (63) which means reduction of each woman's time spent on housework due to market supply of , for example, prepared meals, ready to wear clothing and paid child care. Although this is an important direction to better utilize women's energy in economic development, few families can afford to purchase such services as their incomes remain relatively low. The socialization of housework may not be realized at a massive level in the near future. In the short run, alternative methods must be sought in order to reduce women's burdens. More men are reported to share household responsibilities with wives; but it seems that the latter still shoulder most of the responsibilities. The double burden will remain a dilemma for working women.

The Chinese women's movement in the current phase does not seem to be in conflict with state policy. Activities are organized at all levels of the All China Women's Federation to encourage women to participate in work and politics. Some cadres at the Women's Federation define their work as implementing government policies in the women's sphere (64). It looks like the women's movement will serve government orientations which are strongly economic. Inequalities will be pointed out, as the Women's Federation has always been doing, but the economic priority will make pale the challenge to the fundamental unequal gender structure.

TABLES

Table 1: Enrollment of Female Students by Level of Education, 1947-1985 (in 10 thousand)

Year	Graduate School		Reg. Inst. of Higher Ed.		Secondary Schools								Primary Schools	
					Sec.Tech. Schools		Teacher Training Schools		General Sec. Schools		Agric. & Voc. Sch.			
			No.	% total	No.	% total	No.	% total	No.	% total	No.	% total	No.	% total
1947	...	...	2.76	17.8	...	...	...	...	...	...	...	...	...	...
1949	...	...	2.32	19.8	...	...	...	...	...	...	...	...	...	...
1950	...	...	2.91	21.2	...	...	...	...	34.61	26.5	...	...	...	...
1951	...	...	3.51	22.5	5.19	31.9	5.72	26.0	40.12	25.6	...	...	1,20[illegible]	28.6
1952	...	...	4.54	23.4	7.56	26.0	8.29	24.0	58.58	23.5	...	...	1,679.7	32.9
1953	...	...	5.47	25.3	7.80	26.0	9.53	25.8	71.44	24.4	...	...	1,782.2	34.5
1954	...	...	6.77	26.3	7.61	25.4	8.18	26.6	89.60	25.0	...	...	1,707.1	33.3
1955	...	...	7.58	25.9	7.87	24.7	5.93	27.1	104.94	26.9	...	...	1,775.8	33.4
1956	...	...	10.04	24.6	13.55	25.2	7.97	29.1	151.43	29.3	...	...	2,231.5	35.2
1957	...	...	10.33	23.3	12.23	25.4	8.40	28.4	193.53	30.8	...	...	2,215.9	34.5
1958	...	...	15.37	23.3	27.51	25.4	12.17	31.5	266.33	31.3	...	...	3,325.7	38.5
1959	...	...	18.33	22.6	26.00	27.3	19.60	36.7	286.08	31.2	...	...	3,566.9	39.1
1960	...	...	23.56	24.5	43.11	31.3	26.24	31.3	320.10	31.2	..	...	3,665.6	39.1
1961	...	...	23.35	24.7	23.83	35.8	17.13	43.7	274.54	32.2	...	...	2,082.5	27.5
1962	...	...	21.03	25.3	13.83	39.7	8.75	48.8	256.43	34.1	...	...	2,406.7	34.8
1963	...	...	19.38	25.8	12.71	39.5	6.10	47.2	258.63	34.0	7.68	25.0	...	...
1964	...	...	17.63	25.7	13.01	32.7	6.39	47.6	291.51	34.1	27.36	24.4	3,250.5	35.0
1965	...	...	19.13	26.9	15.40	37.9	7.36	48.6	300.67	32.2	104.50	23.6	4,560.0	39.3
1973	...	...	9.65	30.8	No.		% total		1,136.91	33.0	...	...	5,527.2	40.7
1974	...	...	14.52	33.8	24.29		38.3		1,392.14	38.1	...	...	6,330.8	43.7
1975	...	...	16.33	32.6	24.35		34.4		1,753.71	39.3	...	...	6,824.3	45.2
1976	...	...	18.65	33.0	24.51		35.5		2,357.10	40.4	...	...	6,823.3	45.5
1977	...	...	18.16	29.0	24.15		35.0		2,825.39	41.7	...	...	6,632.1	45.4
1978	...	...	20.65	24.1	18.69	35.3	10.71	29.8	2,715.48	41.5	...	...	6,570.4	44.9
1979	...	...	24.57	24.1	24.34	34.8	12.33	25.4	2,410.25	40.8	...	...	6,577.4	44.9
1980	0.26	11.8	26.81	23.4	26.65	37.2	12.52	26.0	2,180.08	39.6	14.83	32.7	6,517.4	44.6
1981	0.27	14.3	31.24	24.4	22.78	36.0	12.59	28.8	1,895.37	39.0	19.33	40.2	6,301.2	44.0
1982	0.36	13.7	30.54	26.5	22.08	35.2	13.94	33.9	1,777.44	39.3	27.22	38.7	6,099.9	43.7
1983	0.53	14.3	32.49	26.9	24.07	35.0	16.94	37.2	1,735.12	39.5	47.63	39.0	5,937.2	43.7
1984	0.72	16.0	39.98	28.7	30.15	37.2	20.88	40.8	1,821.87	40.0	71.12	40.8	5,937.7	43.8
1985	1.62	18.6	51.06	29.9	38.77	38.3	21.93	39.3	1,893.13	40.2	95.43	41.6	5,986.2	44.8

Source: compiled from Department of Planning, Ministry of Education of the PRC, Achievement of Education in China, Statistics 1949-1983 (Beijing: People's Education Press, 1984), pp. 39-40; and Achievement of Education in China, Statistics 1980-1985 (Beijing: People's Education Press, 1986), pp. 29, 47, 59, 74, 77, 84.

Table 2: Proportion of Males to Females with Primary Education Attainment or Above by Age Group, 1982

Age Group	M:F	Age Group	M:F
6-9	120.3:100	35-39	168.8:100
10-14	117.6:100	40-44	208.3:100
15-19	117.5:100	45-49	297.7:100
20-24	116.3:100	50-54	448.1:100
25-29	127.6:100	55-59	547.2:100
30-34	157.4:100	60 and above	754.9:100

Source: Zhu Chuzhu and Jiang Zhenghua, "Social and Economic Situation of China's Female Population," Renkou xuekan (Journal of Population Studies) 3 (1985): 5.

Table 3: Composition of Sex-Specific Labor Force by Industry, China 1982

Industry	Labor force		% composition		% Distribution	
	Number	% total	Male	Female	Male	Female
Total	521,505,618	100	56.31	43.69	100	100
Agriculture, stock farming, forestry & fishing	394,155,030	73.66	53.75	46.25	70.32	77.97
Mining & lumbering	8,401,845	1.61	80.64	19.36	2.31	0.71
Electricity, gas and water supply	1,500,343	0.29	74.6	25.94	0.38	0.17
Manufacturing	61,663,204	11.83	55.90	44.10	11.74	11.49
Geological exploration	824,043	0.16	77.93	22.07	0.22	0.08
Construction	11,009,419	2.11	81.13	18.87	3.04	0.91
Transport and Communications	8,980,972	1.72	77.12	22.88	2.36	0.90
Wholesale/retail trade, restaurant, hotels and storage	15,507,928	2.97	56.76	43.24	3.00	2.94
Housing management, public amenities and community service	2,441,405	0.47	55.13	44.87	0.46	0.48
Public health services, sports & social services	4,101,355	0.79	51.87	48.13	0.72	0.87
Education and cultural services	12,382,079	2.37	64.62	35.38	2.72	1.92
Natural and social sciences and general technical services	1,202,272	0.23	63.36	36.64	0.26	0.19
Finance and insurance	1,022,975	0.20	68.06	31.94	0.24	0.14
National organizations, Communist Party and political groups	8,018,546	1.54	79.55	20.45	2.17	0.72
Others	298,202	0.05	63.25	36.75	0.06	0.05

Source: Compiled from Guojia tongjiju, Zhongguo tongji nian jian 1986 (China Statistical Yearbook 1986) (Beijing, Zhongguo tongji chubanshe, 1986), p. 109; and Women's Economic Participation in Asia and the Pacific, ed. United Nations, Economic and Social Commission for Asia and the Pacific (Bangkok: United Nations, 1987), p. 73.

FOOTNOTES

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7. Ibid., p. 739.

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9. Hu and Seifman, p. 245.

10. Renmin ribao September 3, 1981.

11. For an account of the impact of the rural responsibility system on education, see Hubert O. Brown, "Primary Schooling and the Rural Responsibility System in the People's Republic of China," Comparative Education Review, 30 (May 1987): 373-87.

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University of Chicage Press, 1983.

15. *Guangming ribao* August 11, 1982.

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18. See, e.g., *Renmin jiaoyu,*(People's Education), n. 10 (Oct. 1985): 12-13; *Guangming ribao,* October 8, 1984 and November 5, 1984, and *Renmin ribao,* May 2, 1986.

19. Tan Manni, "Is There Discrimination against Working Women in China?" *Zhongguo jianshe (China Reconstructs),* n. 3 (1986): 20.

20. "Women in People's China," *China Now* 5 (Sept Oct 1970): 3.

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22. Calculated from *Zhongguo tongji nianjian 1986* (n. 6 above), pp. 97-98.

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27. *Guangming ribao,* February 7, 1982.

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29. *Guangming ribao,* October 8, 1984.

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50. See n. 6, p. 4.

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57. Zhang Yini, "Women Are an Important Impetus for Economic Development," ibid., p. 29.

58. Li Xiaowen, "Help Minority Women to Move toward Modernization," ibid., p. 79.

59. Liang Shihong, "Reform and Women's Liberation," ibid., p. 18.

60. Interview with a cadre of an All China Women's Federation office in southern China on February 3, 1988. The interviewee prefers to be anonymous.

61. Cited in *Wen Wei Po,* March 7, 1987, Hong Kong.

62. See n. 57 above.

63. Chen Yu, "Thoughts on the Socialization of Housework" and Zeng Hui, "The Socialization of Housework and Women's Liberation," in *Gaige kaifang yu funu,* (n. 55 above), pp. 133-56.

64. See n. 60 above.

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